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C. KERSTEN

Berlin 1915

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Translated by N. Clifford Ricker.

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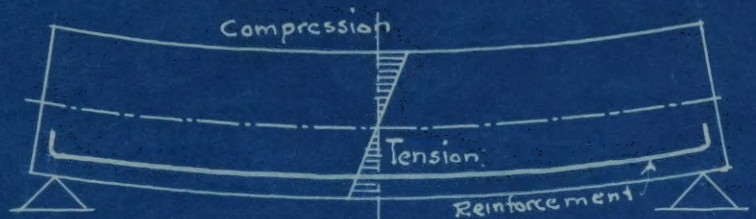

FIG. 1.

FIG. 3.

FIG. 4.

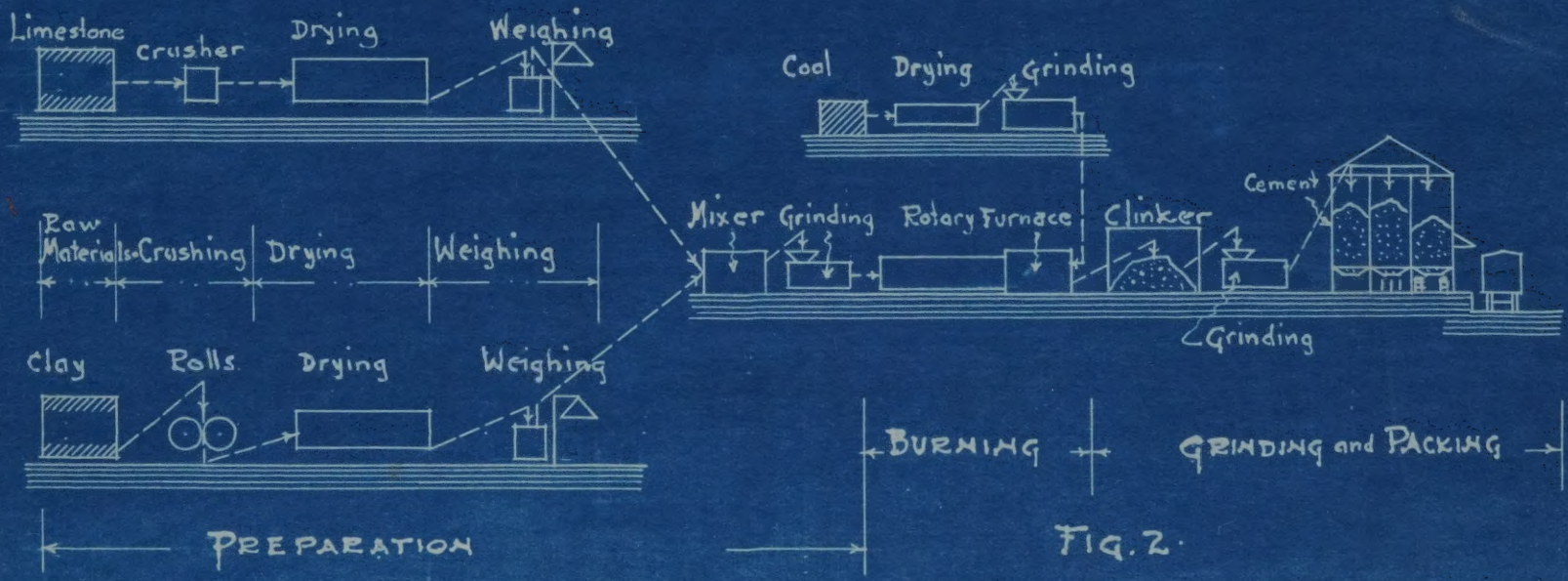

FIG. 2.

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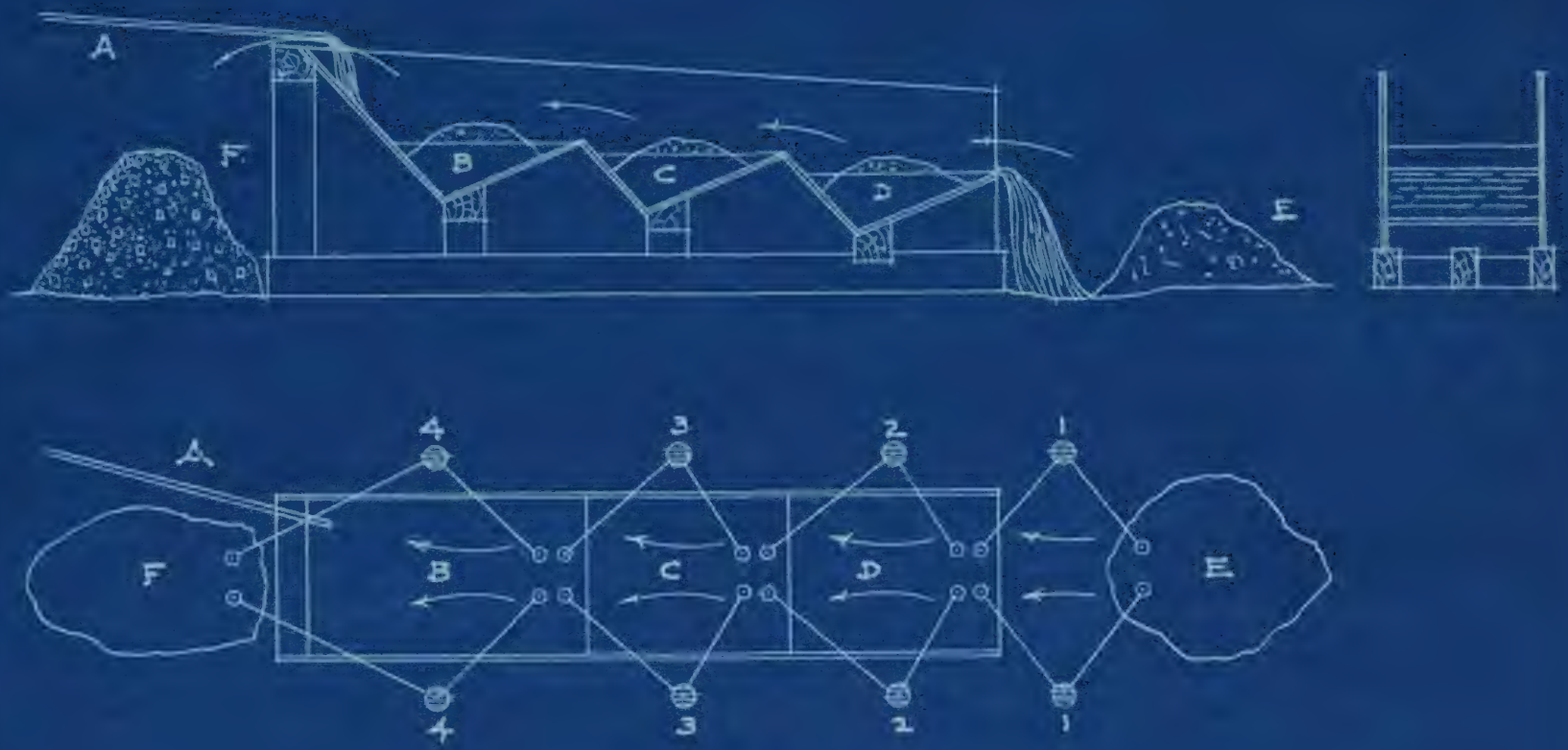

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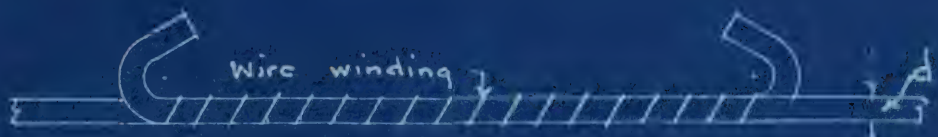


Fig. 6.

Fig. 7.

Fig. 9.

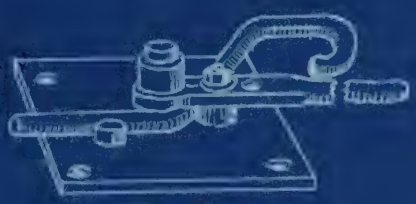


Fig. 8.

Fig. 10.

Fig. 11.

Fig. 13.

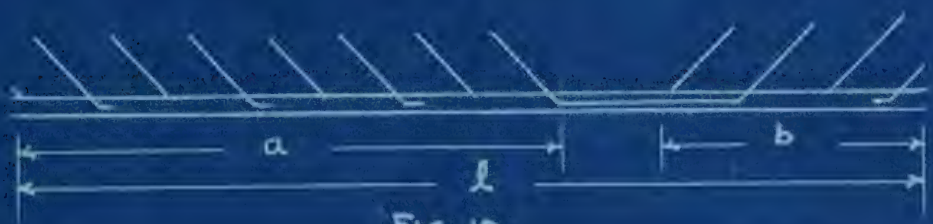


Fig. 12.

Fig. 14.

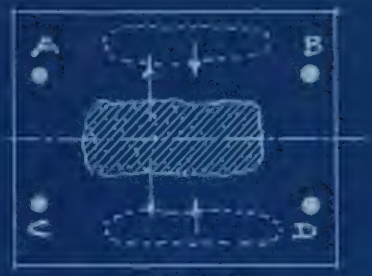


Fig. 16

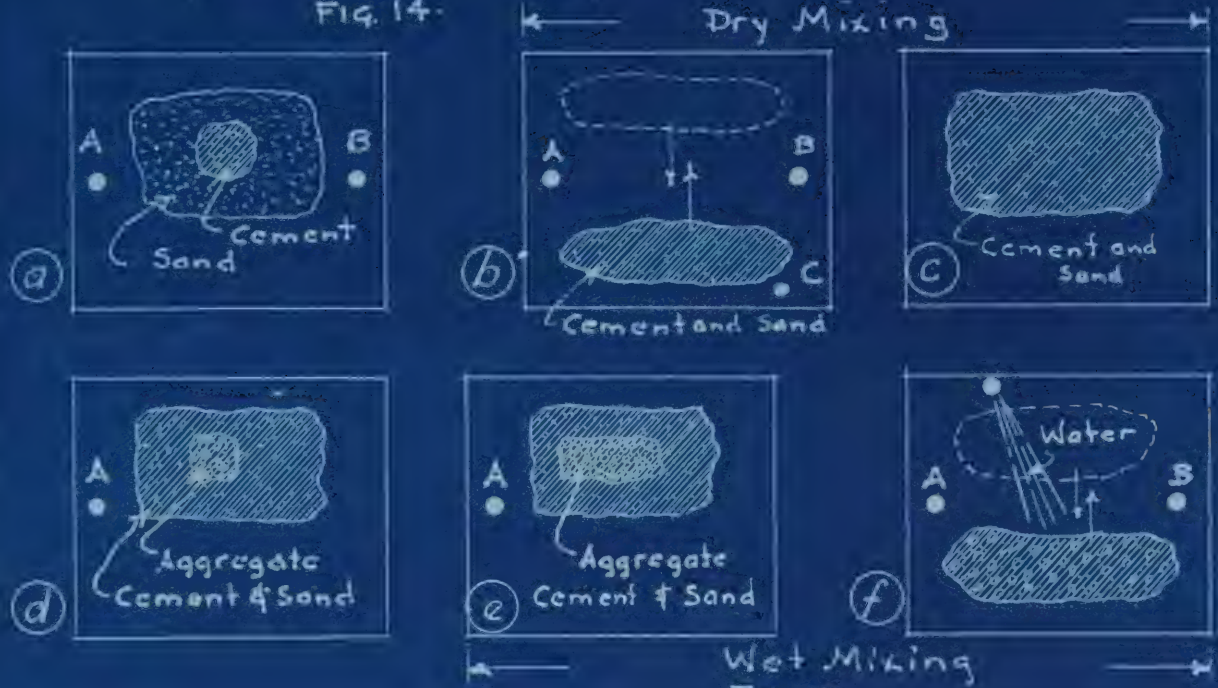
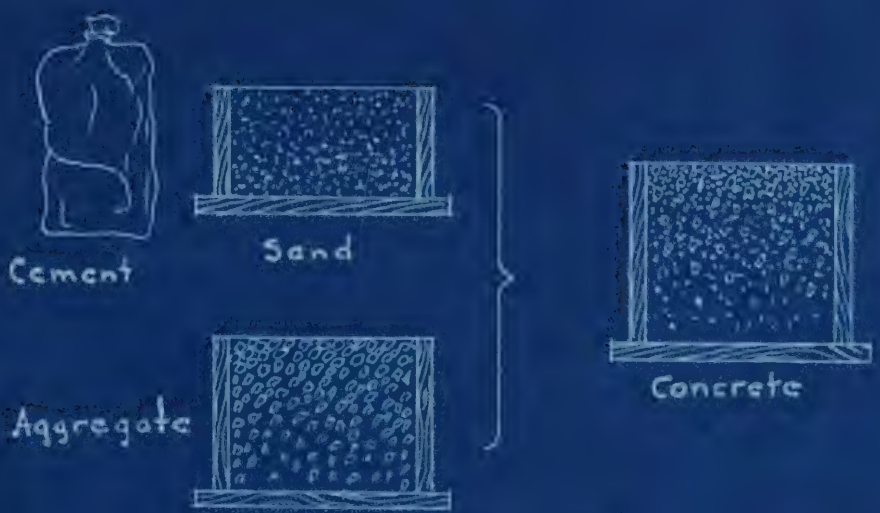


Fig. 15

Fig. 17 - Photograph of a Concrete Mixer.



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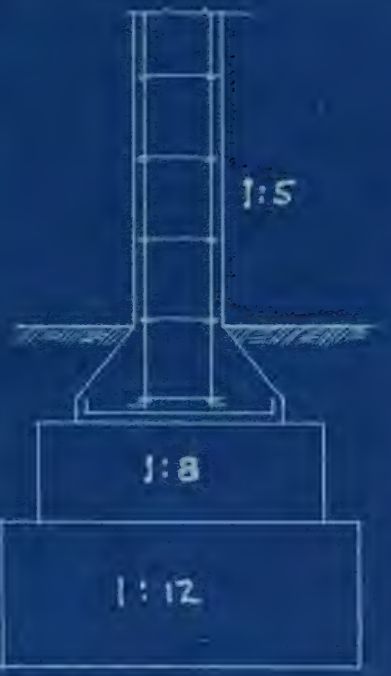
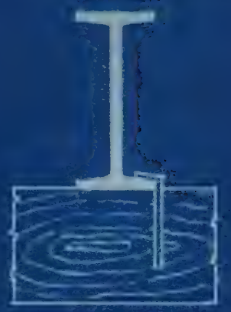


Fig. 19



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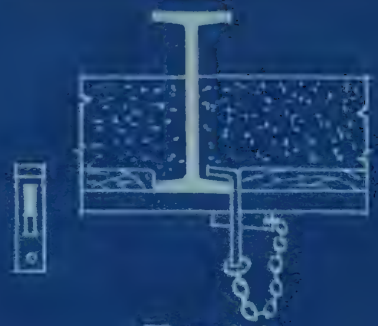


Fig. 24

Fig. 25

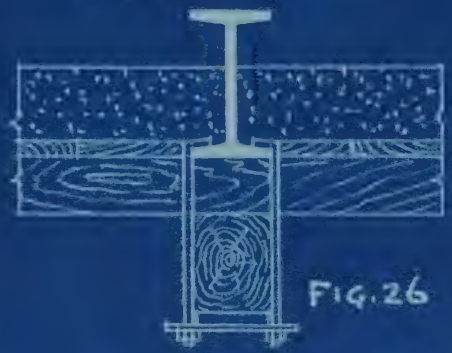


Fig. 26

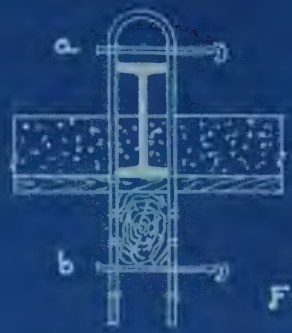


Fig. 27

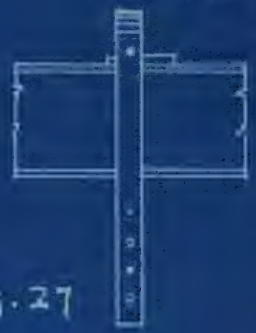


Fig. 20

Fig. 21

Fig. 22

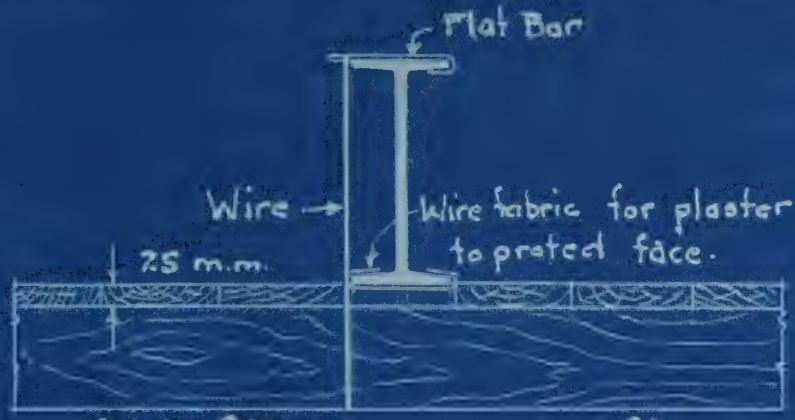


Fig. 28

Fig. 29

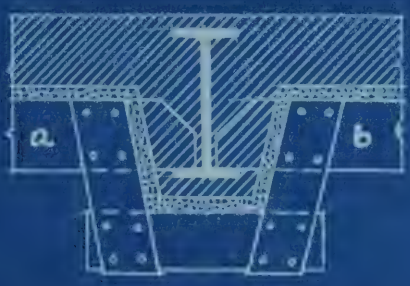


Fig. 31

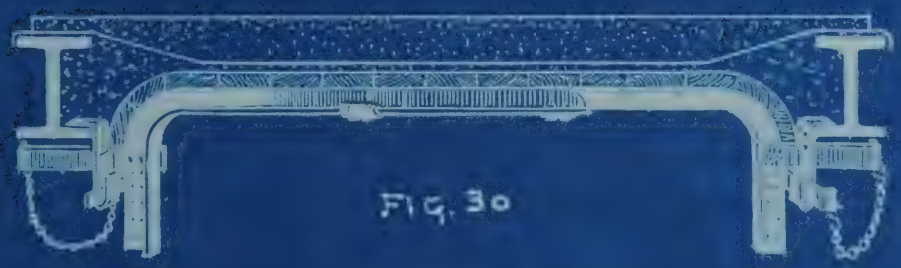


Fig. 30

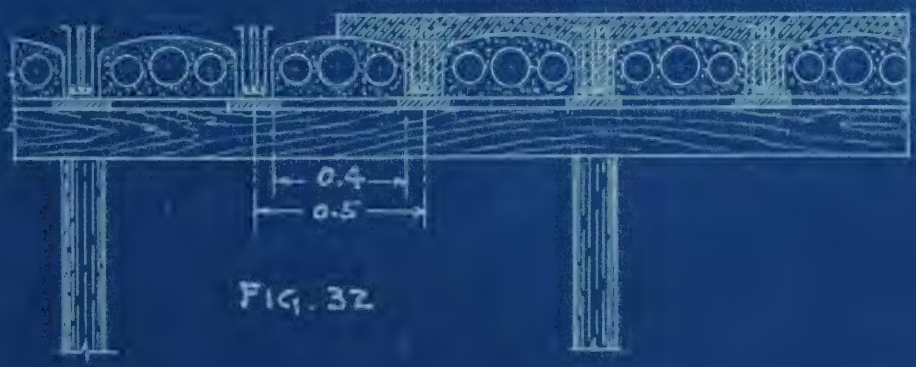
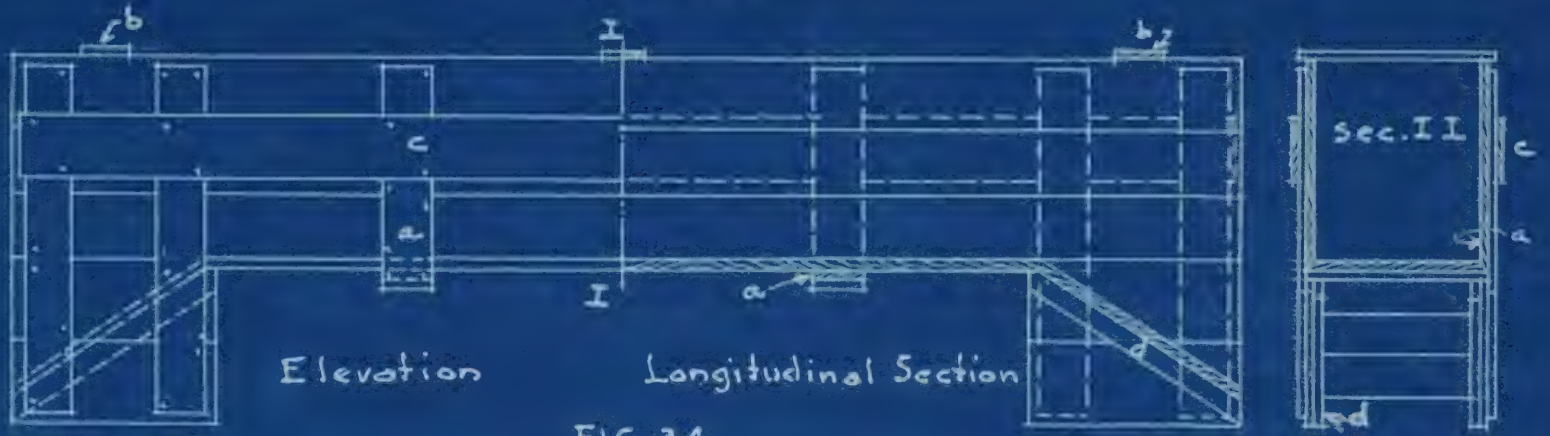


Fig. 32

FIG. 33



Elevation Longitudinal Section

FIG. 34

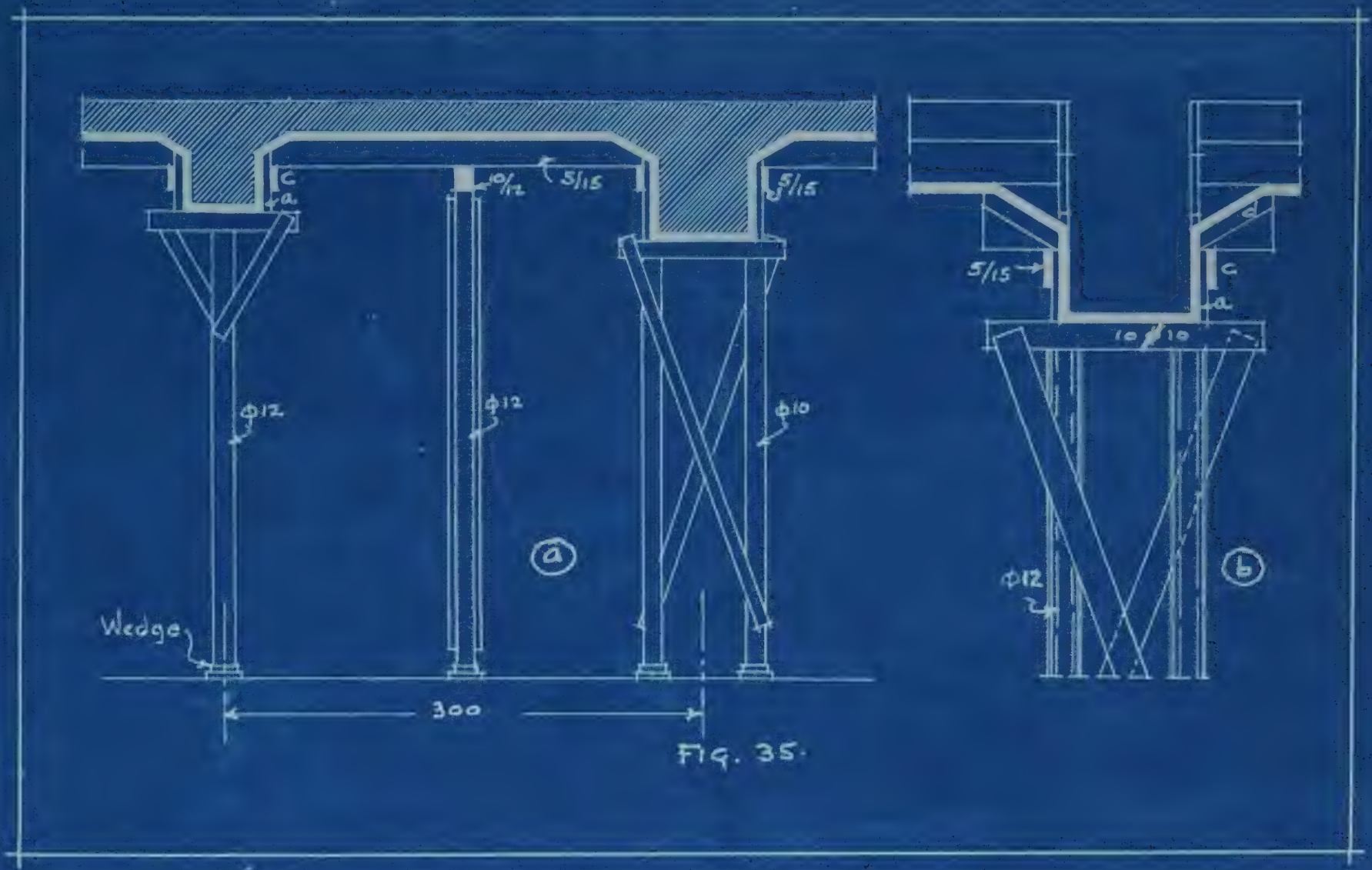


Fig. 35.

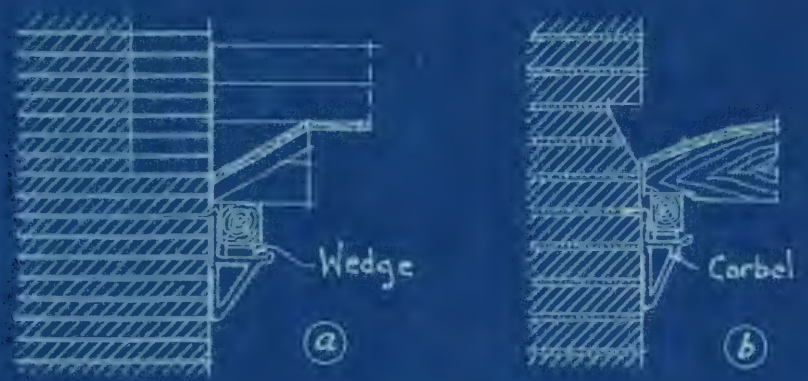


Fig. 36

Fig. 37

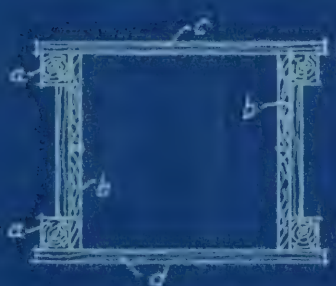


Fig. 38

Fig. 39- Shows Column Forms

Fig. 40- Shows a clamp for Column Forms

Fig. 41- Shows- Bracing of several column forms.

Fig. 42- Retaining Wall Forms

Fig. 43 : Wall Forms

Fig. 44- 45 - Photographs of Brazen Concrete.

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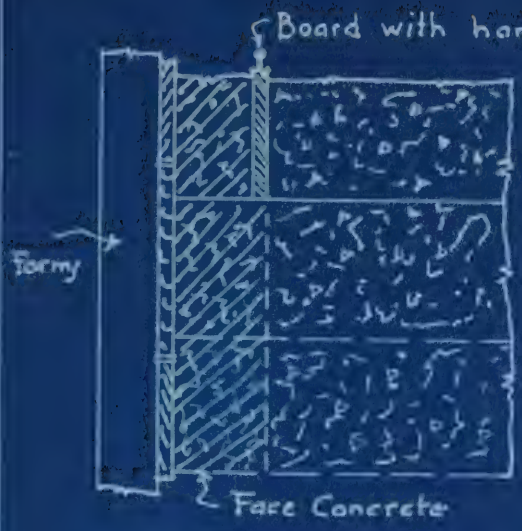


Fig. 46

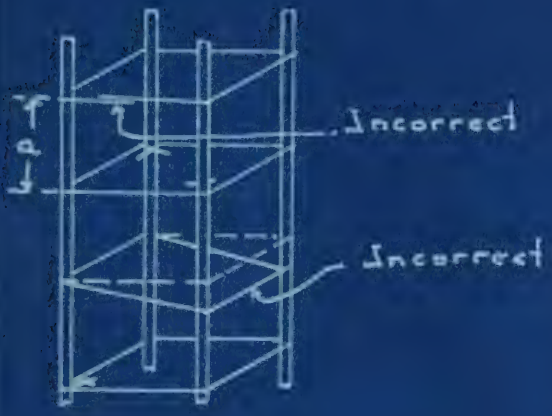


Fig. 51

Fig 55

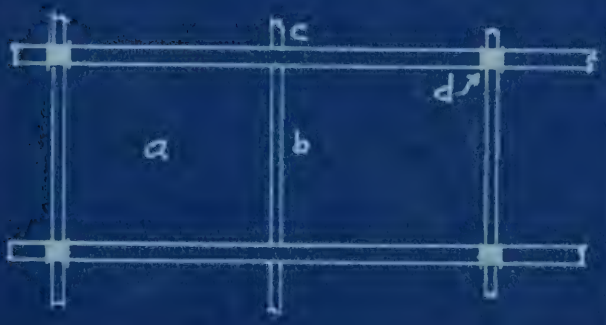


Fig. 59

Fig. 47 & 48 show a "home made" testing machine for beams.

Fig. 49 - Shows a testing machine.

Fig. 50 shows a test specimen.

Fig. 52 shows a tamper.

Fig. 53 shows a float for finishing

Fig 54 shows a tamper.

Fig. 56 shows the underside of beams and slabs with parts of forms left in place.

Fig. 57 shows a machine for winding spirals.

Fig. 58 shows different positions for using the spiral machine.

Fig. 60

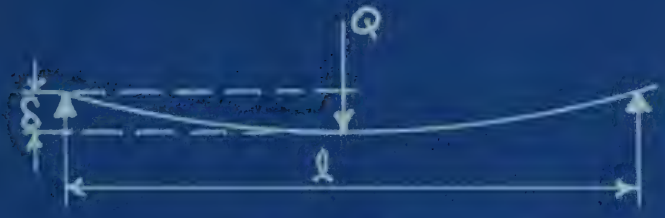


Fig. 61

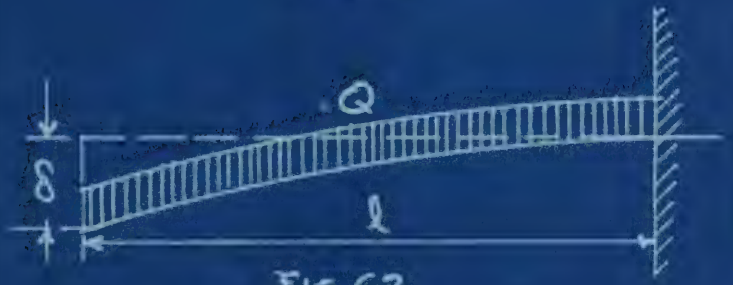


Fig. 62

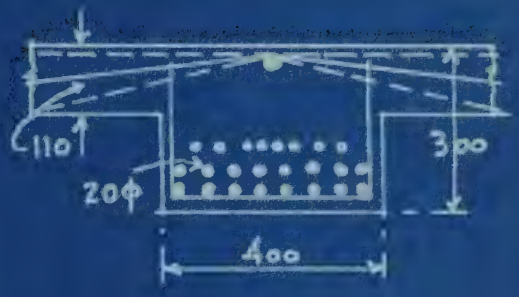


Fig. 64

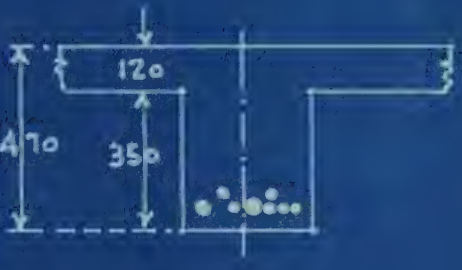


Fig. 65

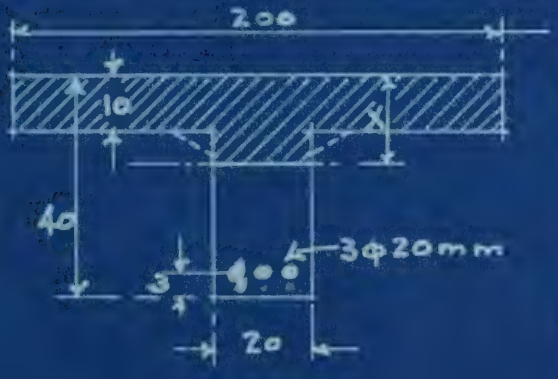
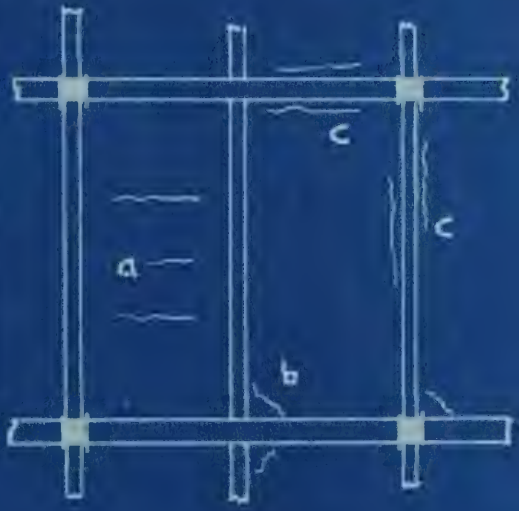


Fig. 63



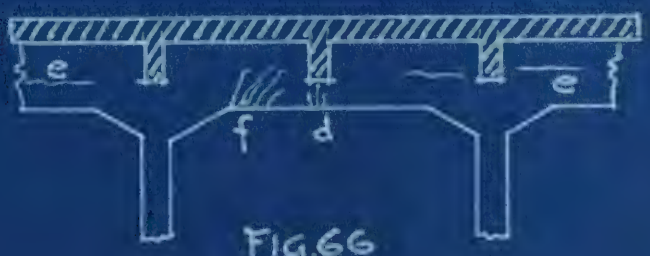


Fig. 66

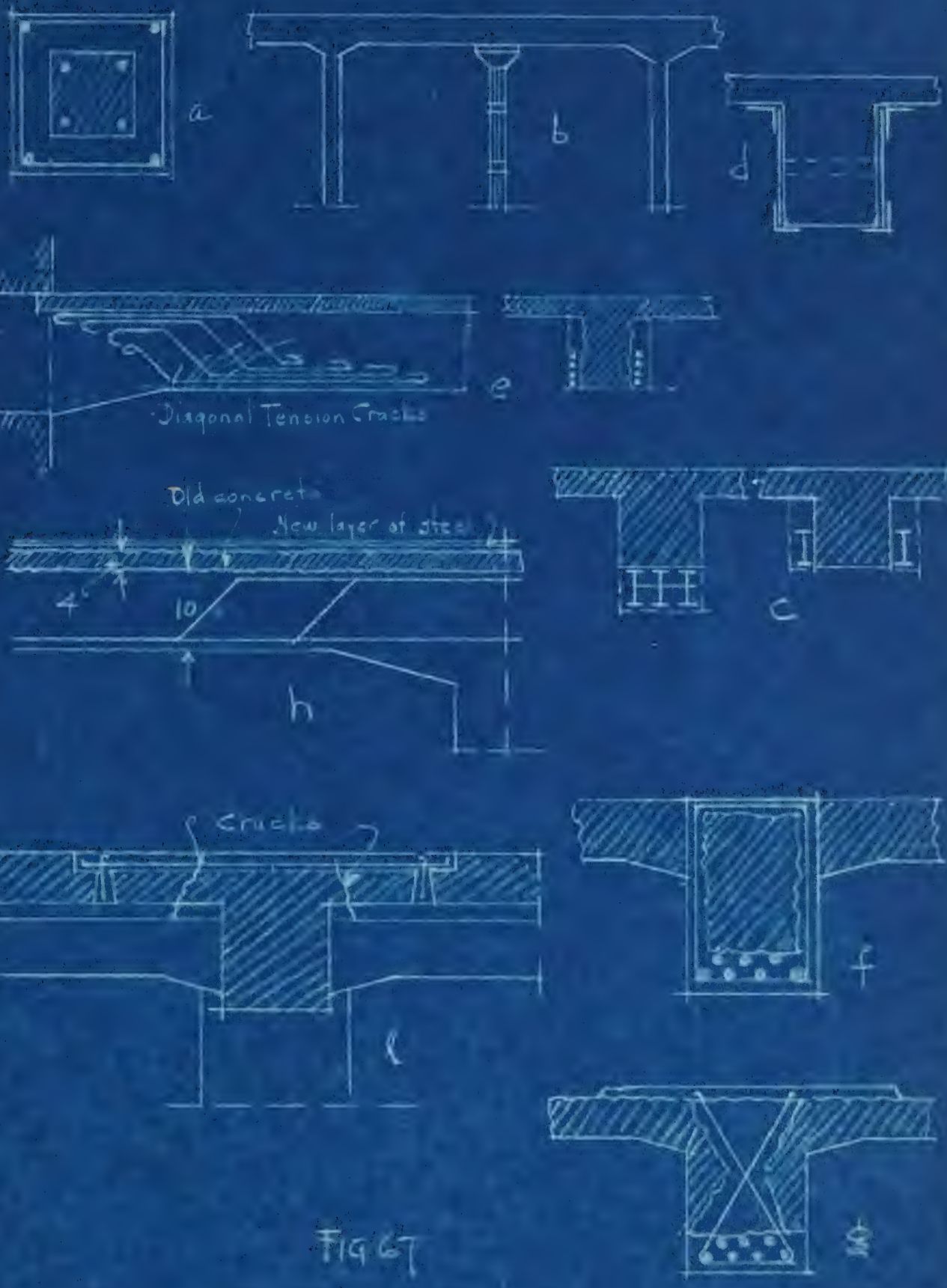

a
b
d
e
Diagonal Tension Cracks
Old concrete
New layer of steel
4"
10"
h
c
I
I
II
II
Cracks
f
g
g

Fig 67

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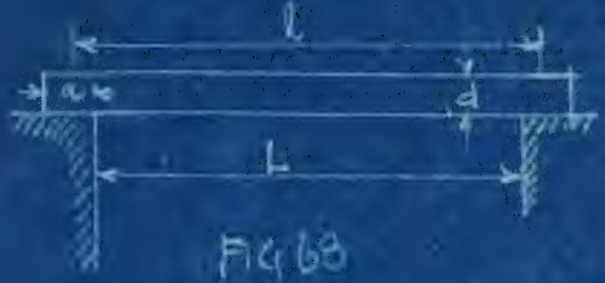

Fig 68

Fig 69

Fig 70

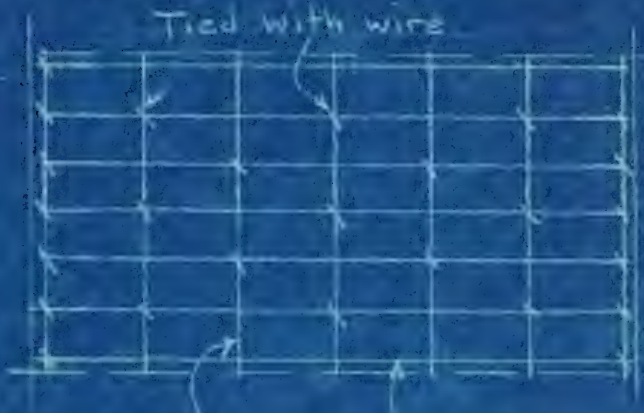

Fig 72

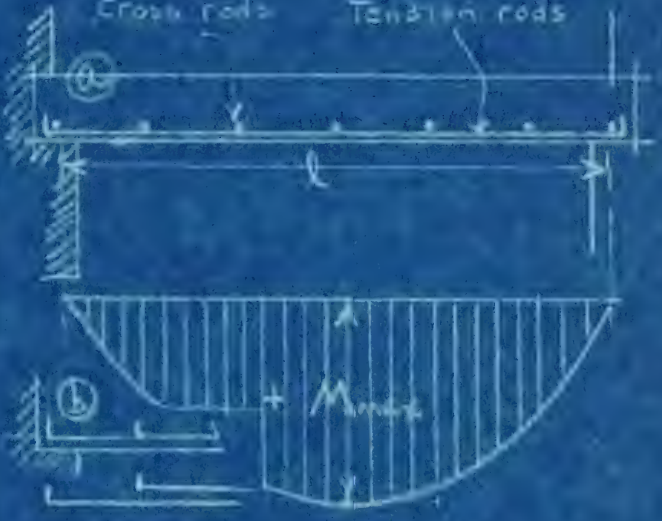

Fig 71

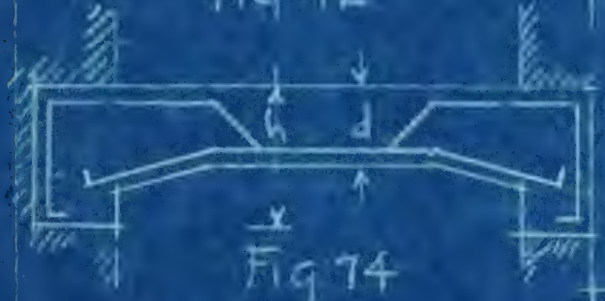

Fig 74

Fig 73

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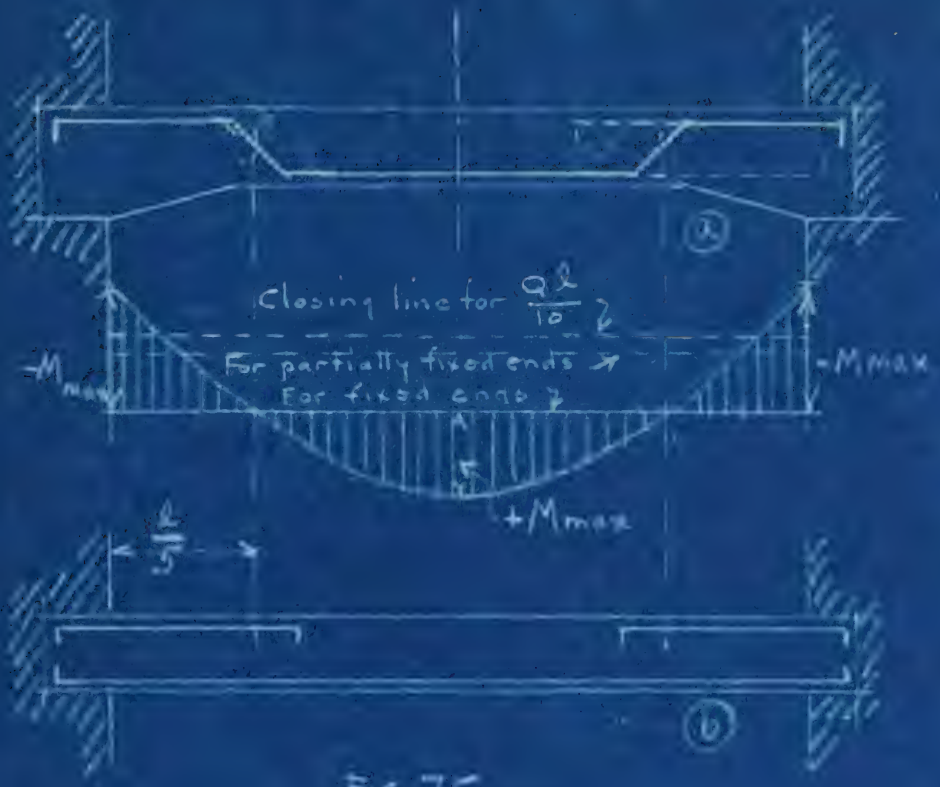

Fig 75

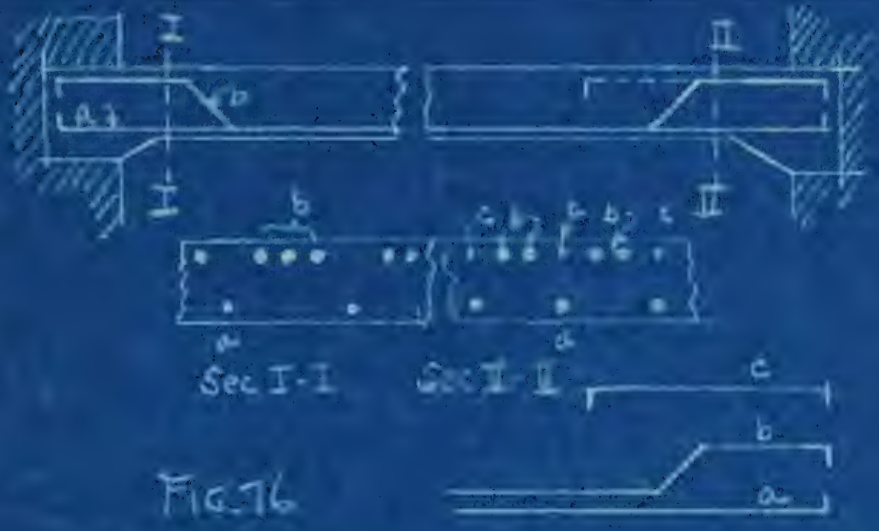

Fig 76

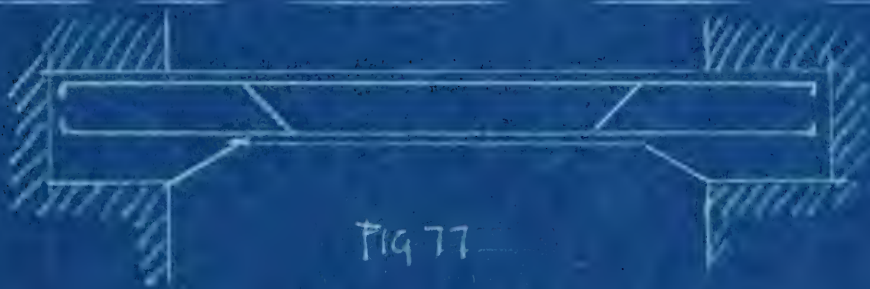

Fig 77

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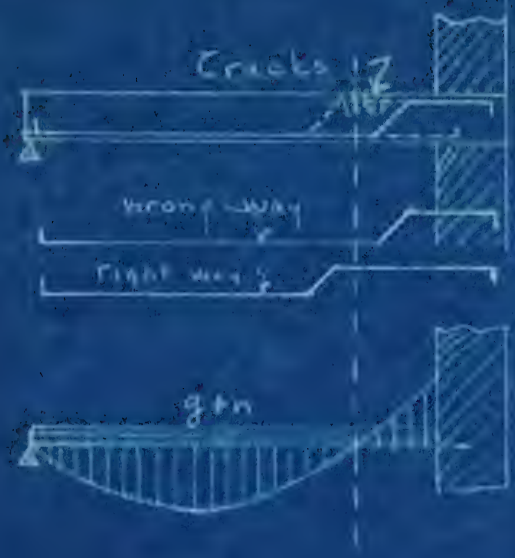
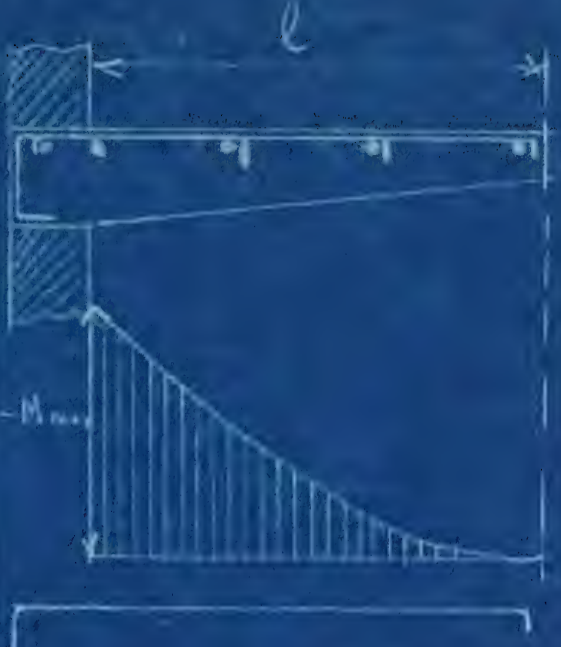


FIG 78



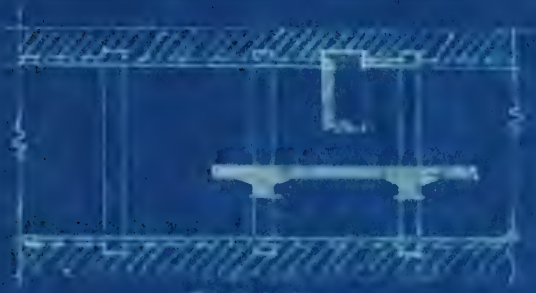


FIG 81

FIG 82

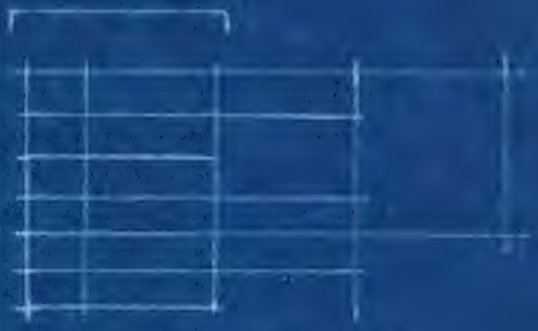


FIG. 79

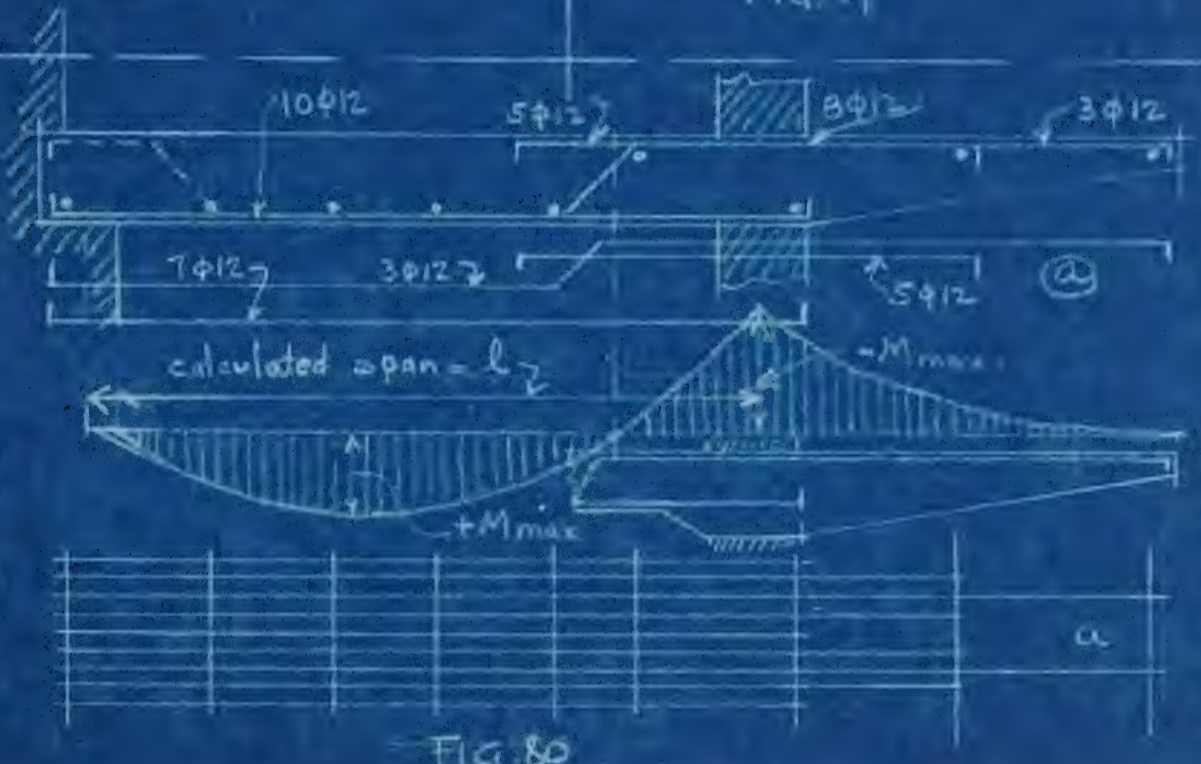


FIG 80

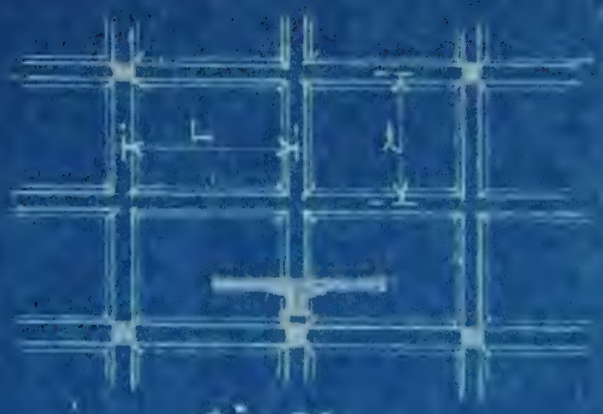
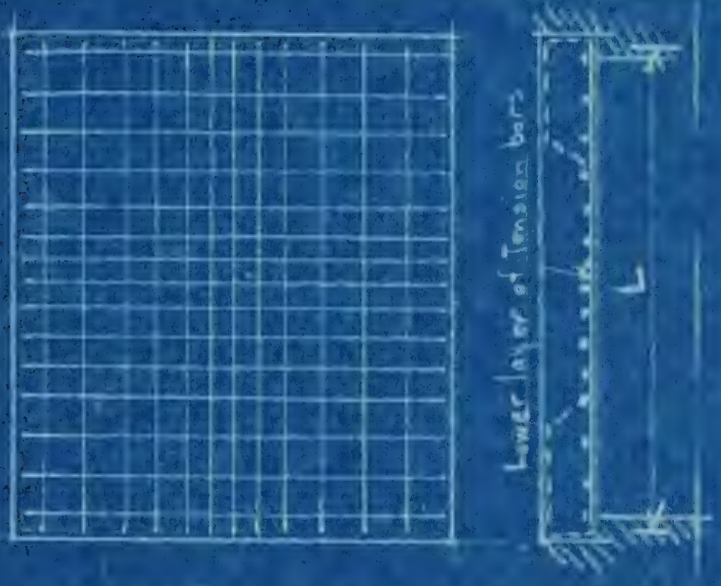


Fig 83

Fig 85



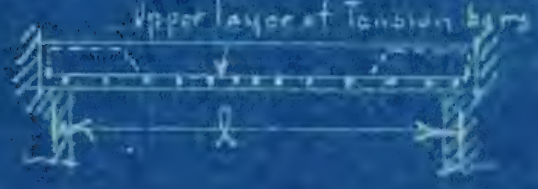


Fig 84

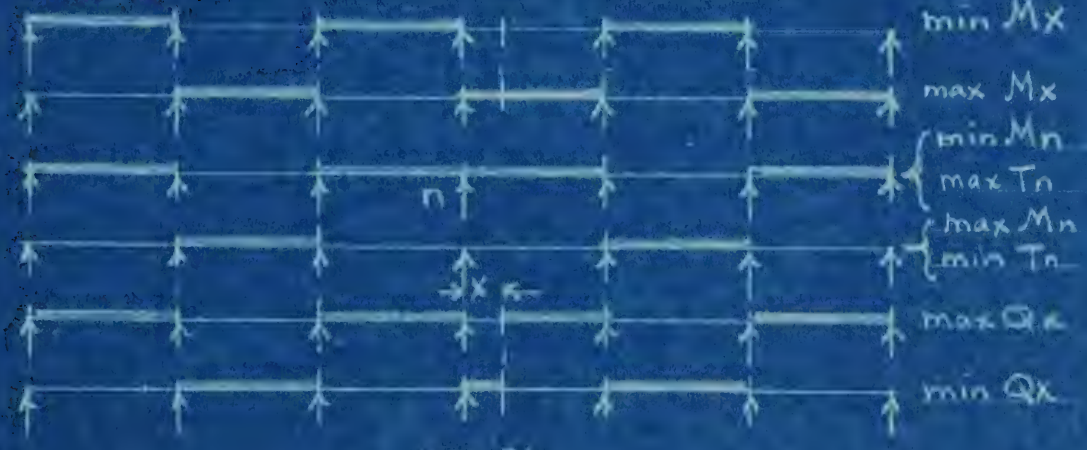


Fig 86

Fig 87

Fig 88

Fig 92

Arrangement of the reinforcement in the top.

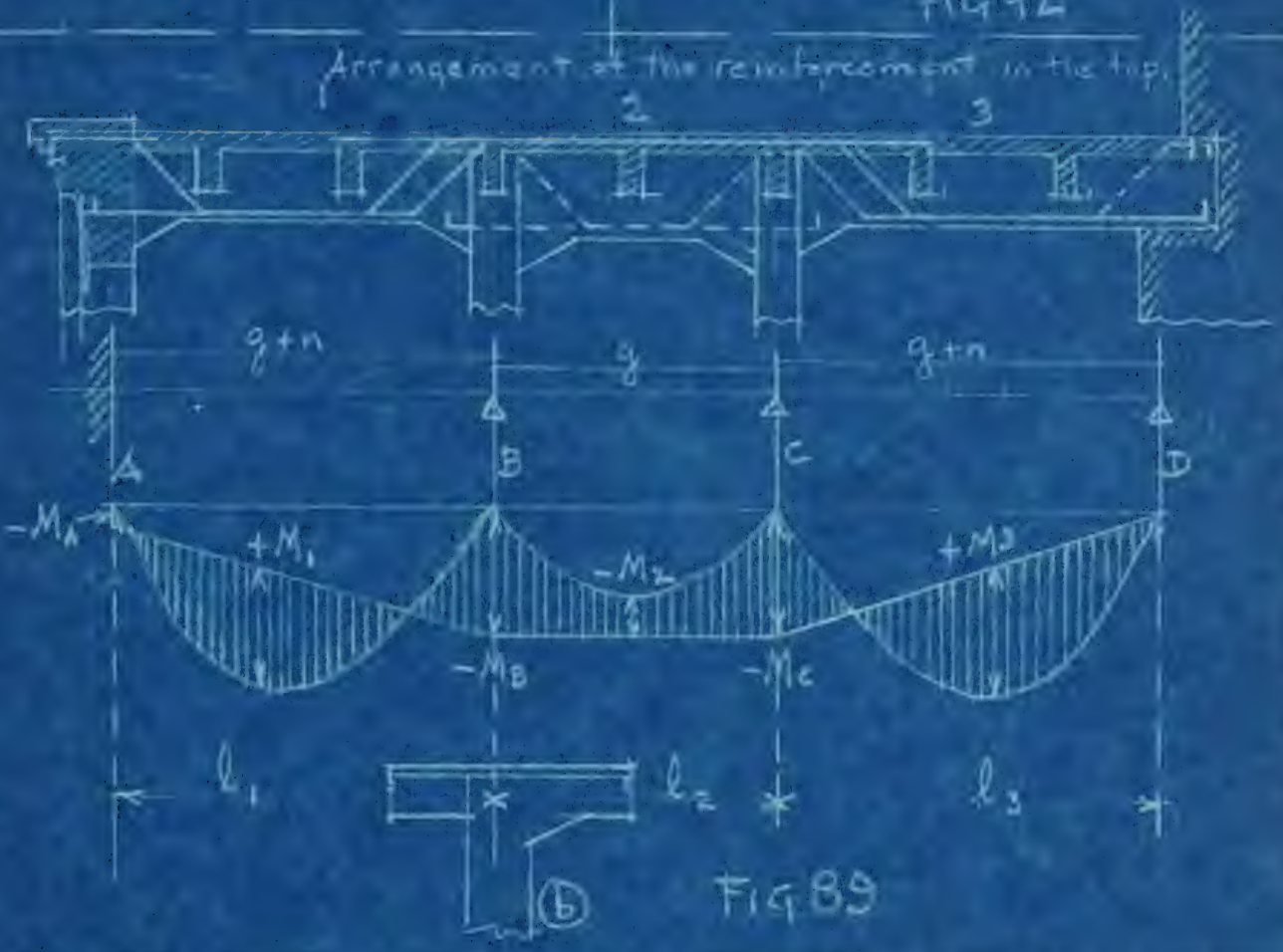
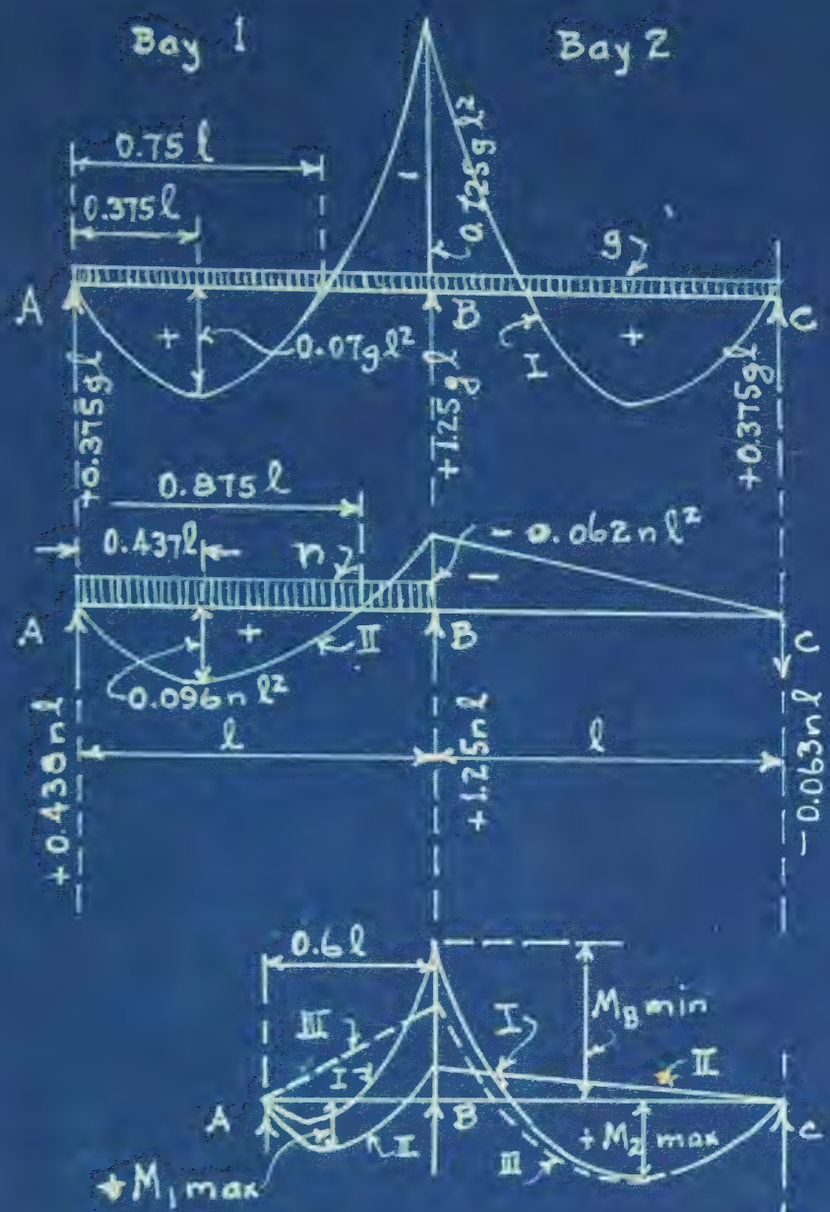


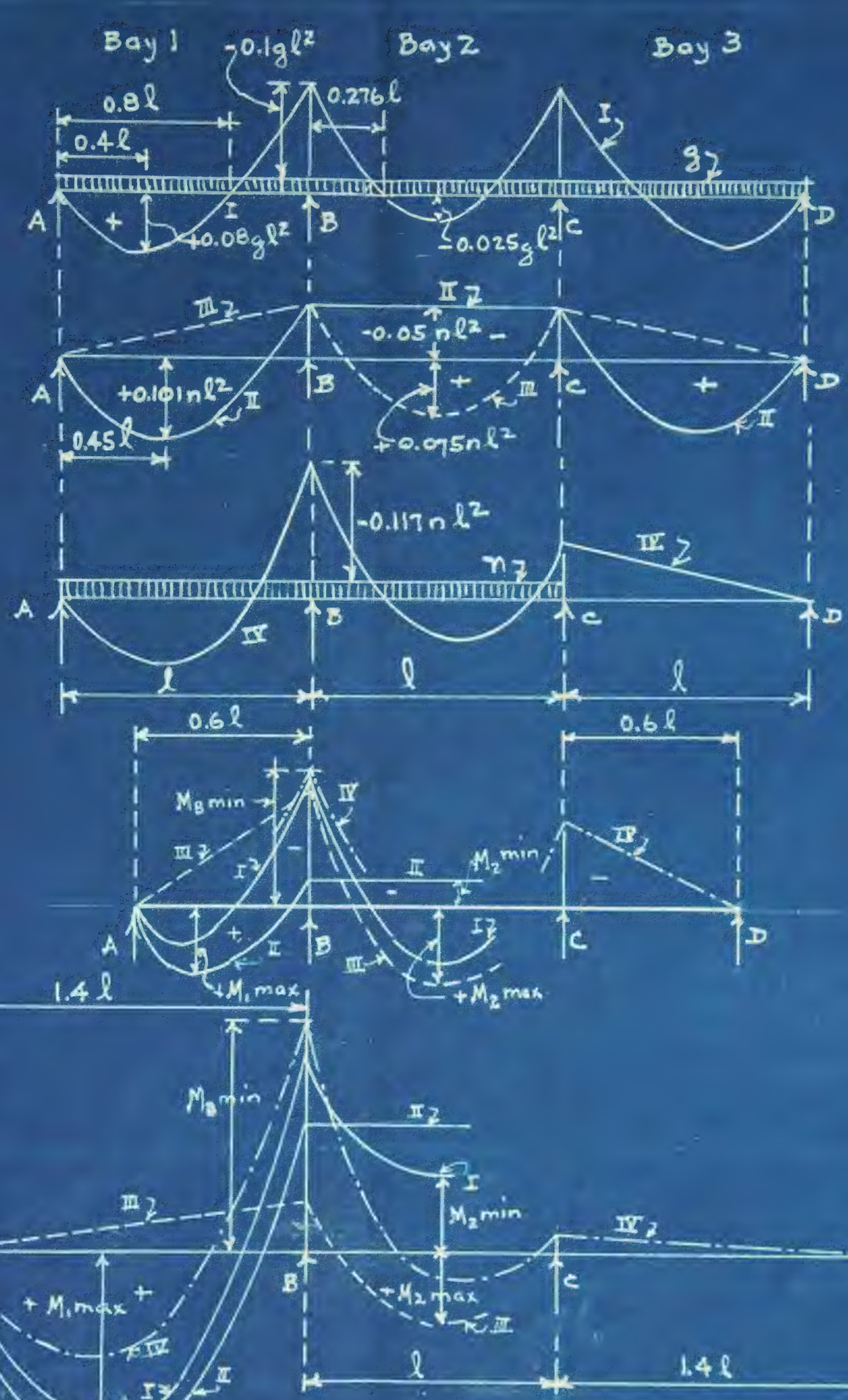
Fig 89

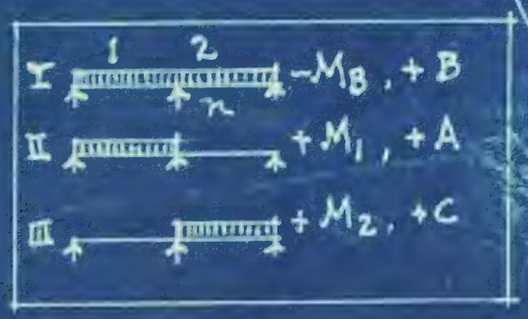
Fig 90

Bay I
Ba
0.75 l
0.375 l
A
B
+0.375gl
-0.07gl²
+1.25gl
I
0.875 l
0.437l
n
-0.06
II
-0.096nl²
+0.430nl
l
+1.25nl
0.6l
III
M
+M₁max
+1.4l
+M₂max
+M₁max


Bay 1
Bay 2
0.75 l
0.375 l
-0.125 g l²
g
A
B
C
+0.07 g l²
I
+0.375 g l
+1.25 g l
+0.375 g l
0.875 l
0.437 l
n
-0.062 n l²
II
-0.096 n l²
+0.438 n l
+1.25 n l
-0.063 n l
l
0.6 l
III
M_B min
+M_2 max
+M_1 max

1.4 l
l
M_B min
III
II
I
A
B
C
M_1^I
+M_1 max
+M_2 max
M_I


Bay 1
Bay 2
Bay 3
-0.1 g l²
0.8 l
0.4 l
0.276 l
I
g
A
B
C
D
+0.08 g l²
-0.025 g l²
II
III
-0.05 n l²
+0.101 n l²
0.45 l
+0.075 n l²
-0.117 n l²
n
IV
0.6 l
M_B min
M_2 min
+M_1 max
+M_2 max
1.4 l
l
M_B min
M_2 min
+M_1 max
+M_2 max


1
2
I -M_B , + B
II + M_1 , + A
III + M_2 , + C

1
2
3
I
II
n 2
M_1,3, -M_2, +A
III +M_2, -A
IV -M_B, +B

FIG. 93.

91, 94, 95

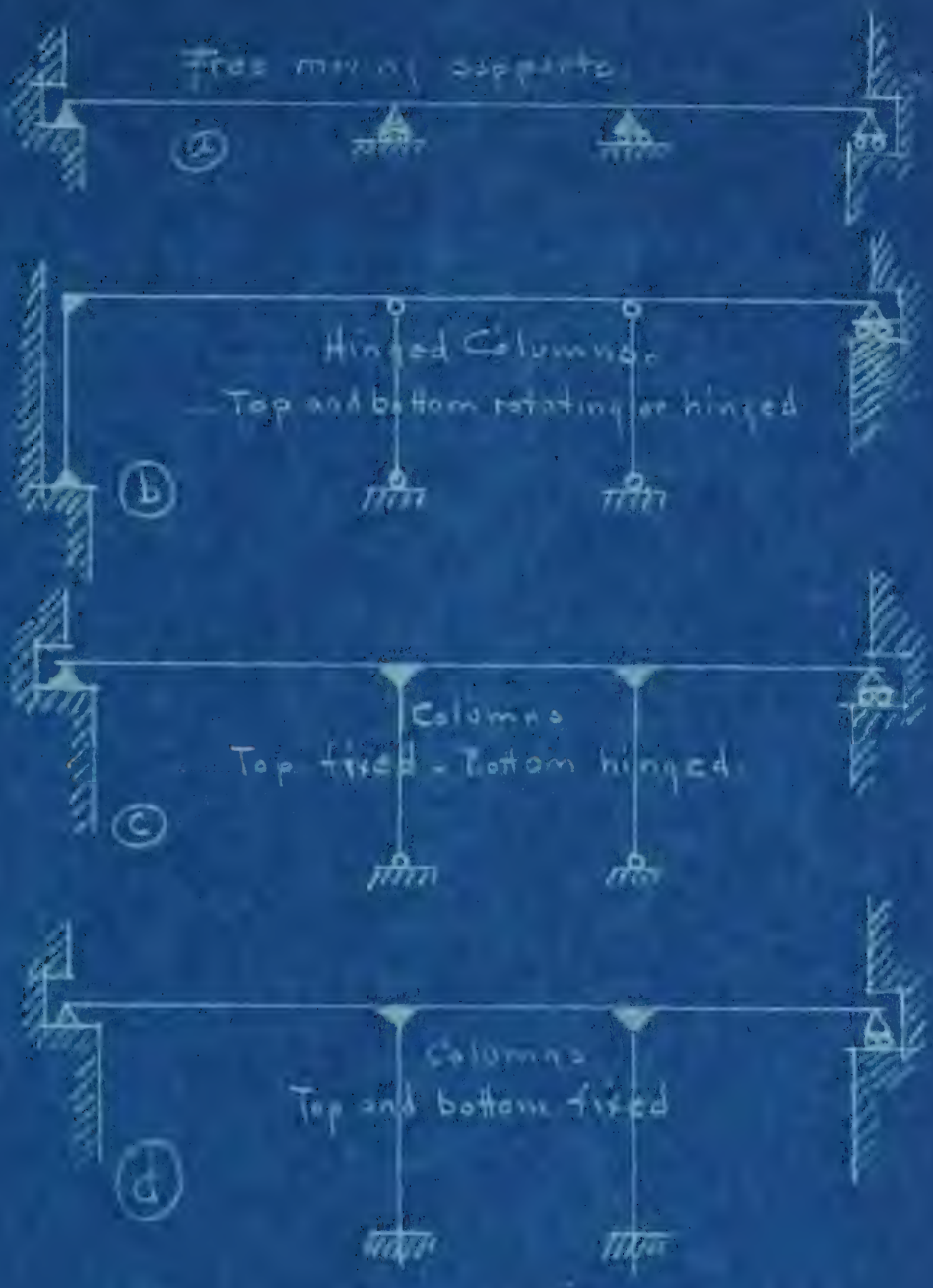


Fig 91

Fig 94

Fig 95

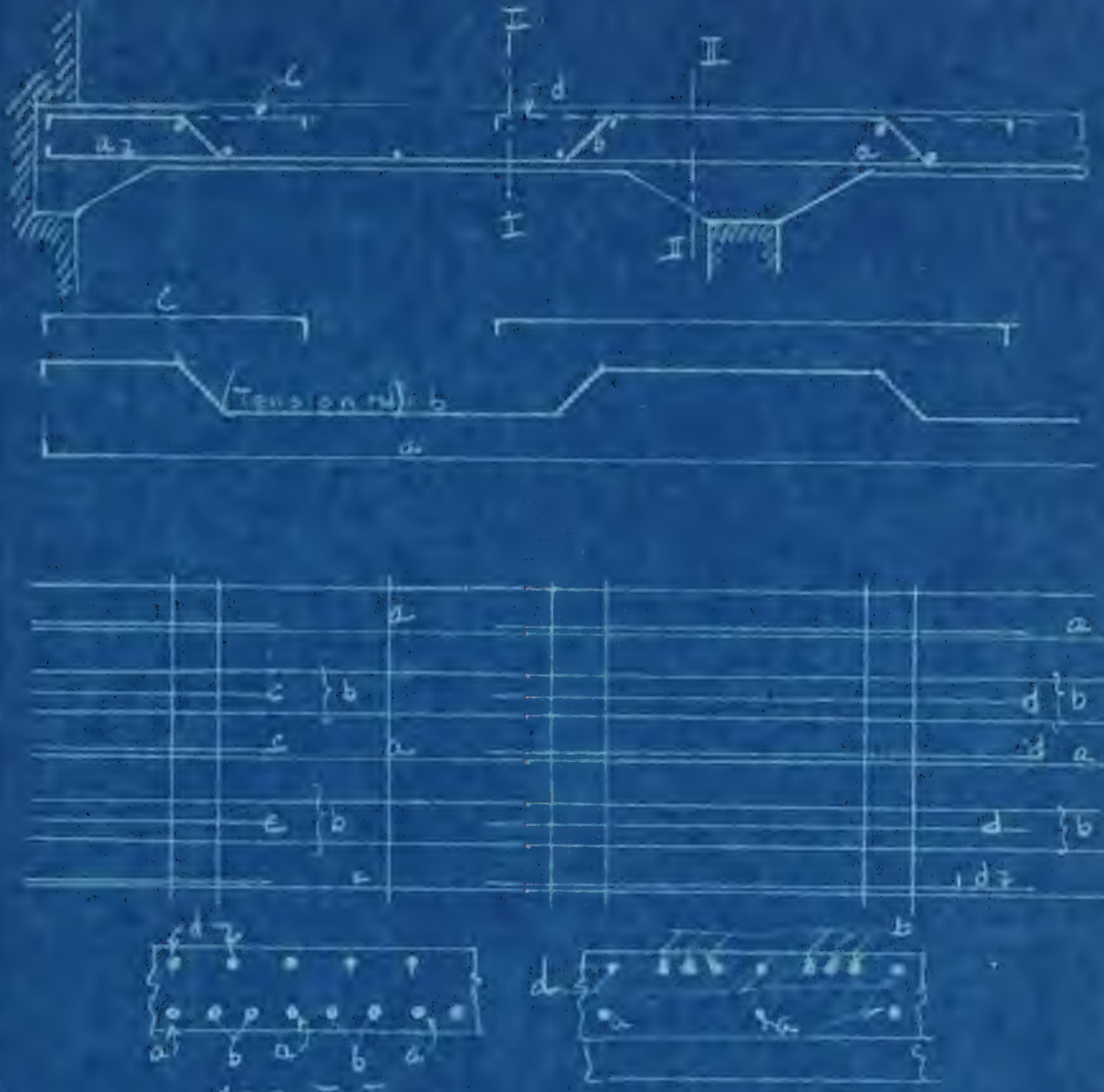

I
II
c
d
a
b
I
II
c
(Tension rod) b
a
a
c
b
a
d
b
d
a
e
b
d
b
e
a
1d2
d
b
a
b
a
b
a
SEC. I-I
SEC II-II

Fig 96

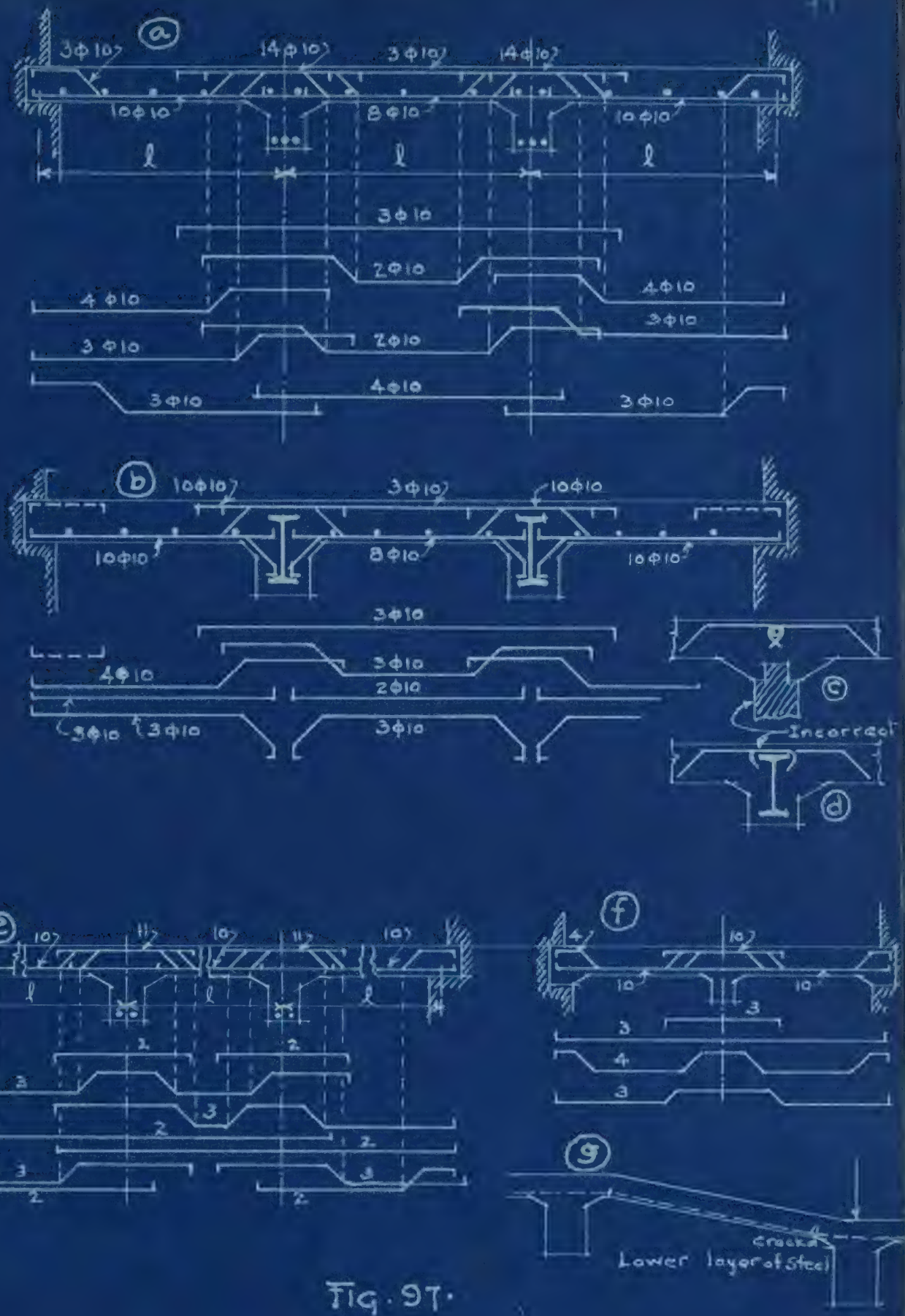

a
3φ10
14φ10
3φ10
14φ10
10φ10
8φ10
10φ10
l
3φ10
2φ10
4φ10
4φ10
3φ10
3φ10
2φ10
4φ10
3φ10
3φ10
b
10φ10
3φ10
10φ10
10φ10
8φ10
10φ10
3φ10
3φ10
4φ10
2φ10
3φ10
3φ10
3φ10
c
Incorrect
d
e
10
11
10
11
10
l
2
3
3
2
2
3
3
2
f
4
10
10
10
3
3
4
3
g
Cracks
Lower layer of Steel

Fig. 97.

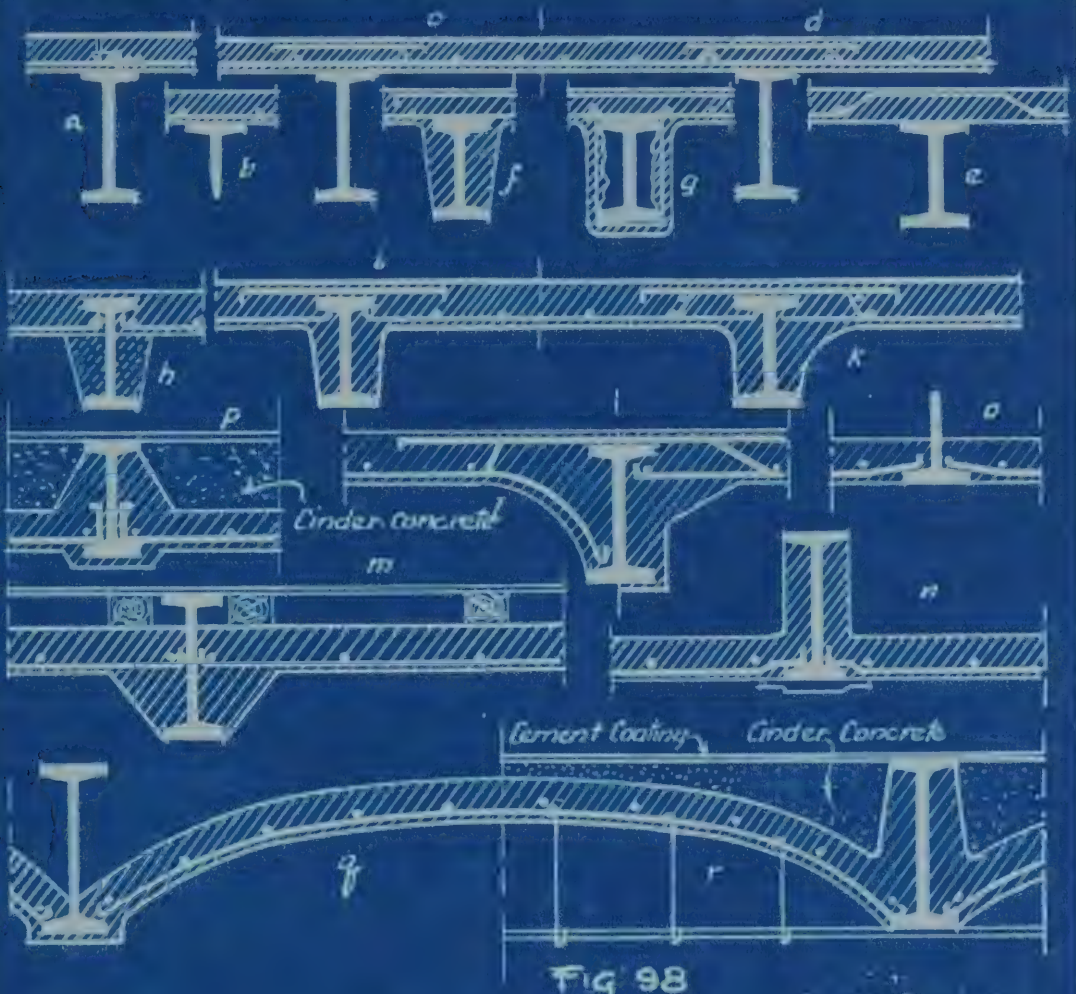


Fig 98

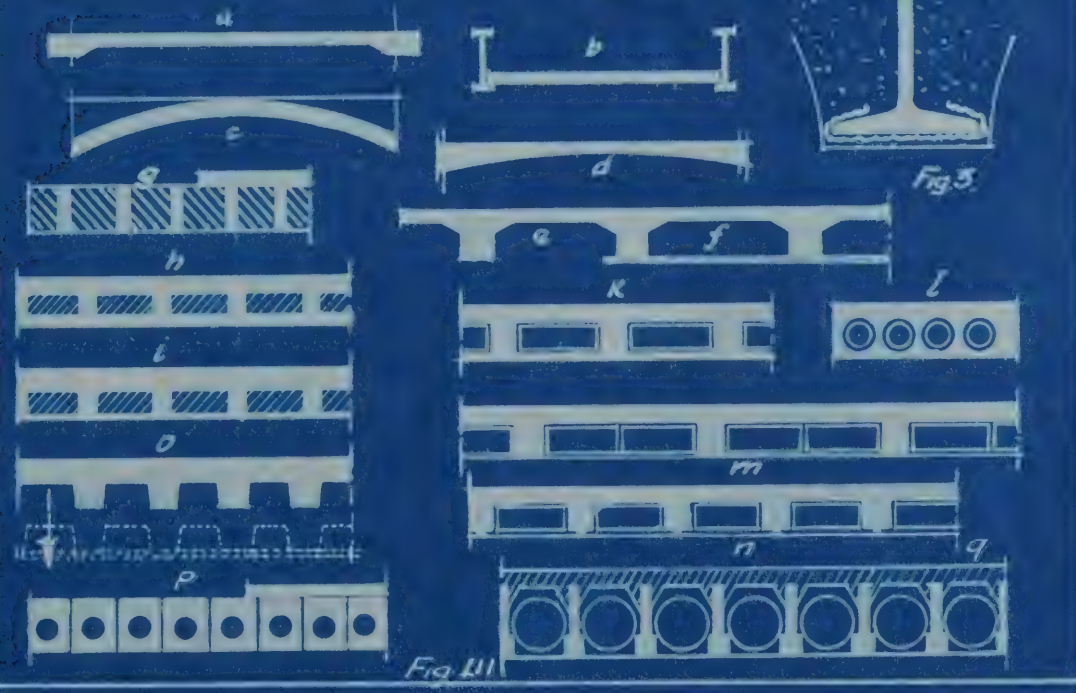


Fig. 111

Fig. 3.

[illegible]
[illegible]
[illegible]

99-102

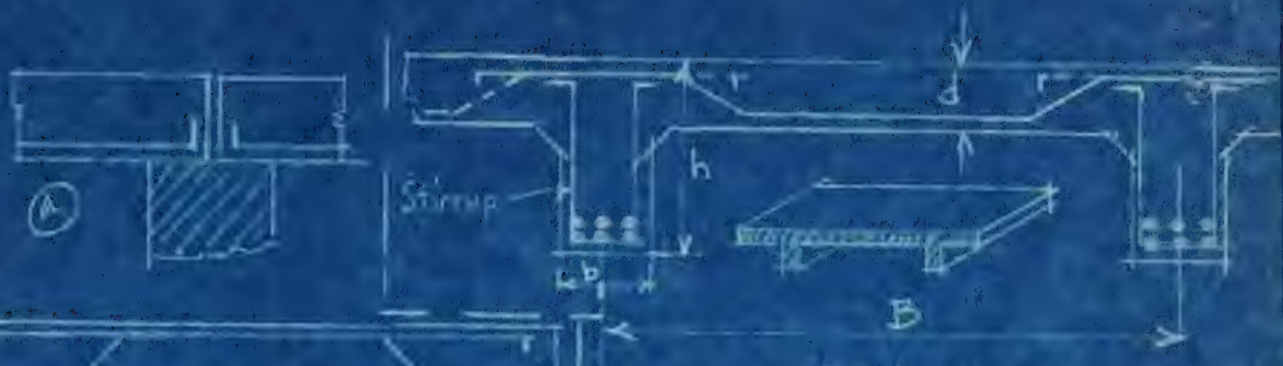


FIG 100

FIG 99

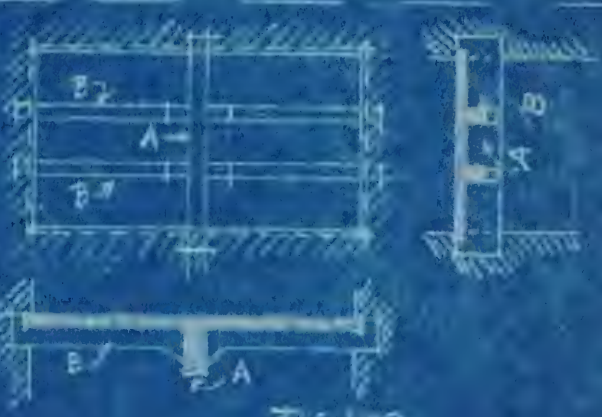


FIG 102

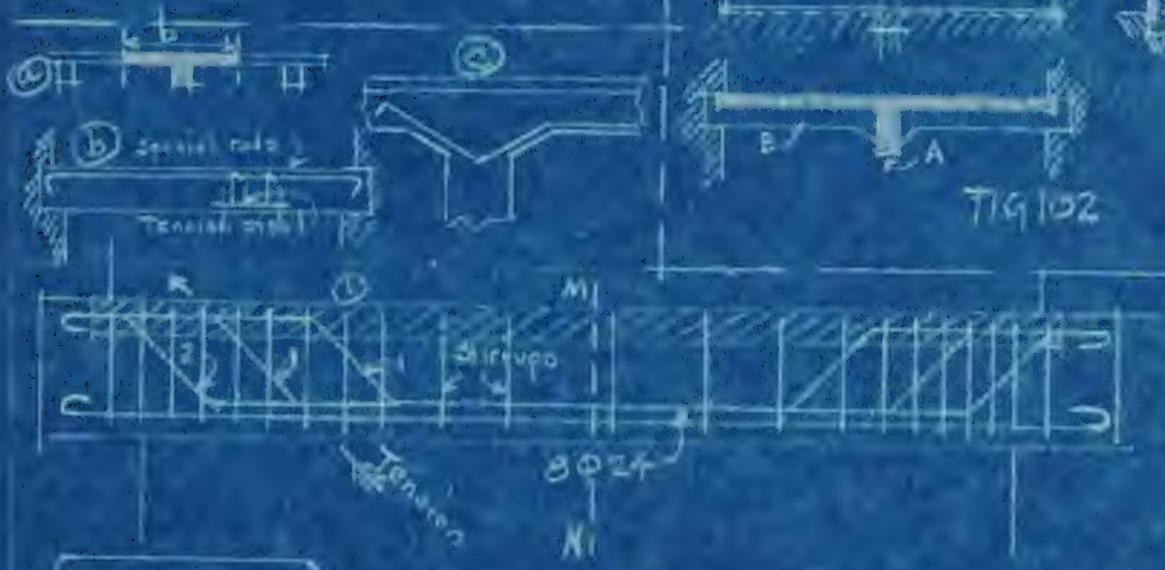


FIG 101

Fig 103 Fig 104

Fig 106

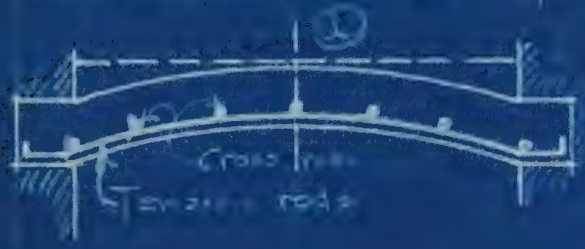


Fig 105

Fig 107

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108, 109, 110, 113, 115

Fig 108

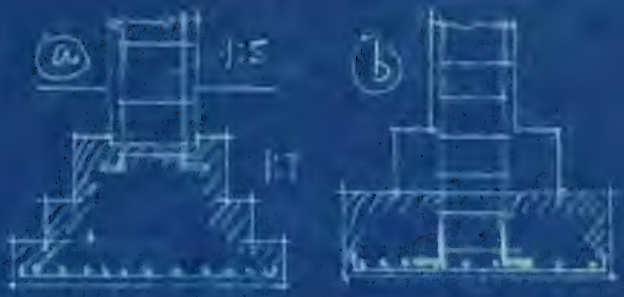
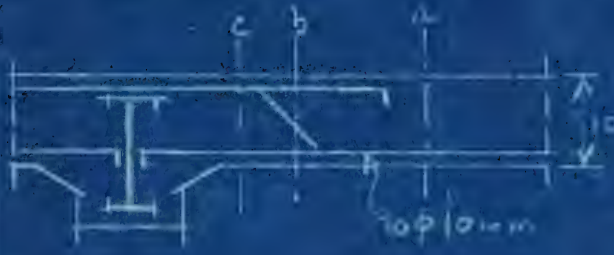


Fig 109

Fig 110 is a diagrammatic drawing of the reinforcement in a floor panel.



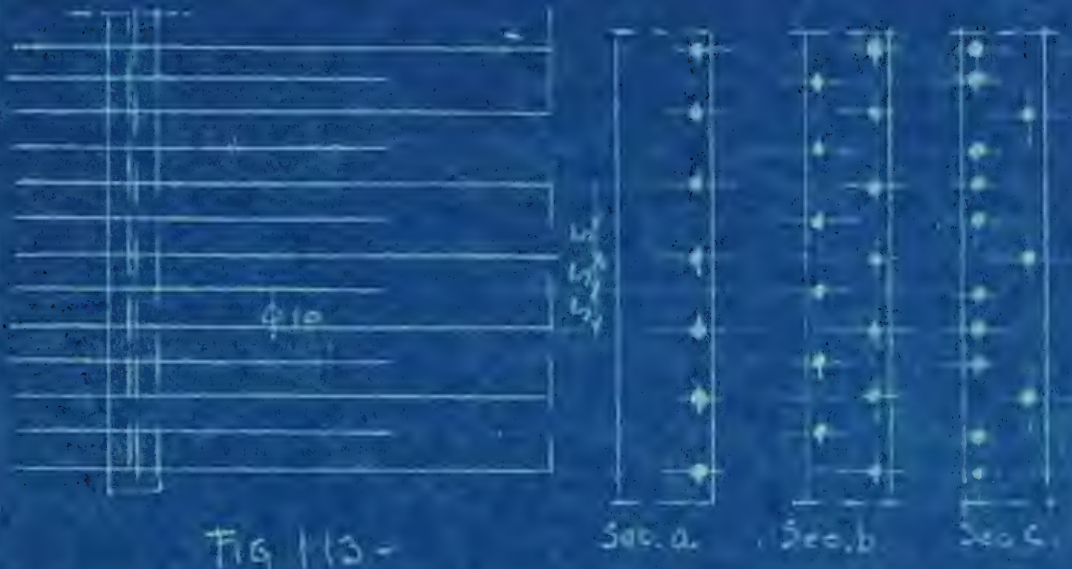


Fig 113-

No.	Pieces	Dia.	Length Each	Sketch	Weight
1a	120	10mm	3.40m.m	3.25	248.28 Kg
1e	116	10mm	4.10m.m	0.55 1.74 1.40 3.80	290.11 Kg

Fig 115

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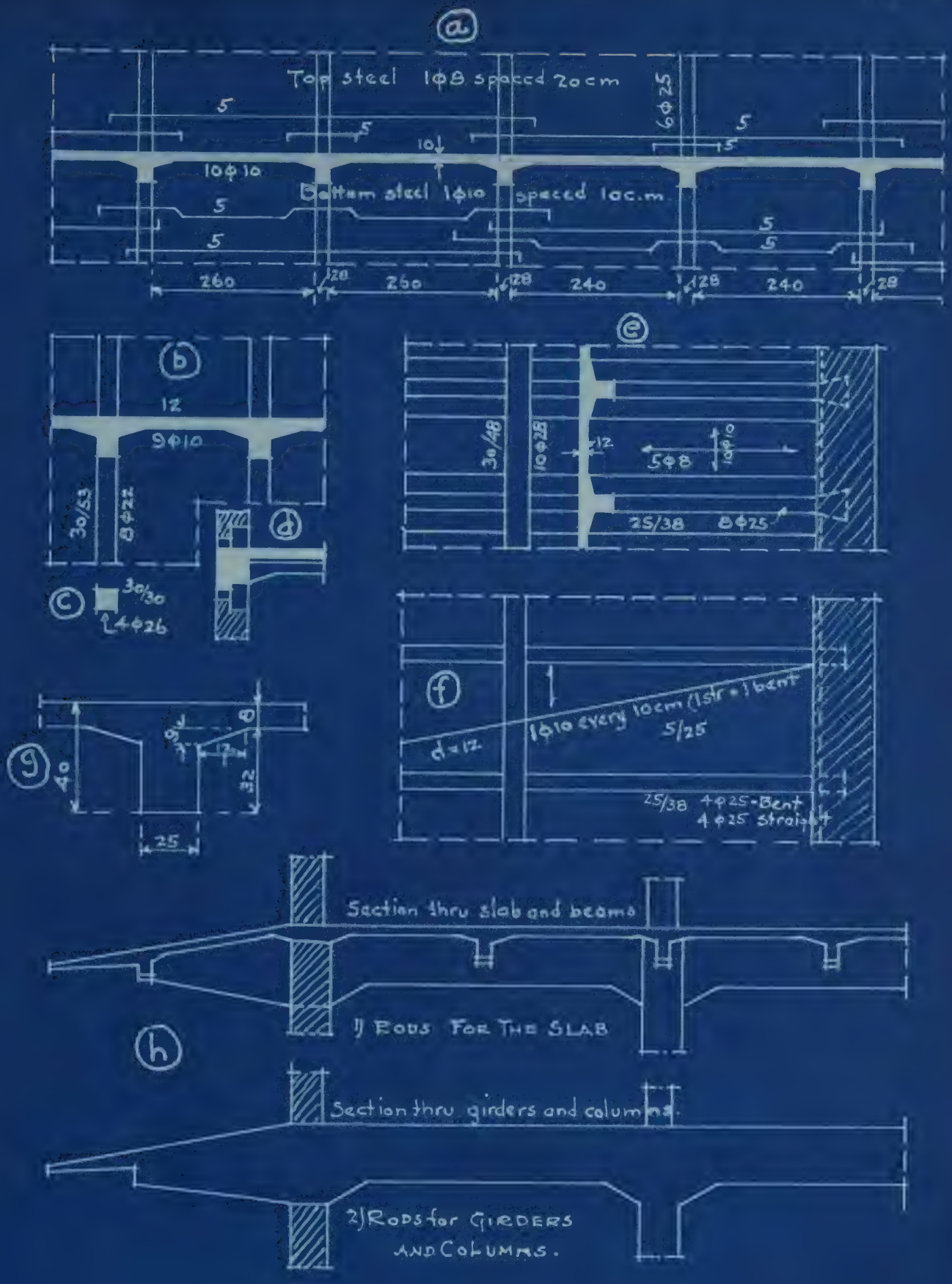

a
Top steel 1φ8 spaced 20cm
6φ25
10φ10
Bottom steel 1φ10 spaced 10c.m.
260
28
240
b
12
9φ10
30/53
8φ22
c
30/30
4φ26
d
e
30/48
10φ28
12
5φ8
10φ10
25/38
8φ25
f
1φ10 every 10cm (1st r + 1 bent
5/25
d=12
25/38 4φ25-Bent
4φ25 Straight
g
40
32
25
Section thru slab and beams
1) Rods For The Slab
h
Section thru girders and columns.
2) Rods for Girders
and Columns.

FIG. 112.

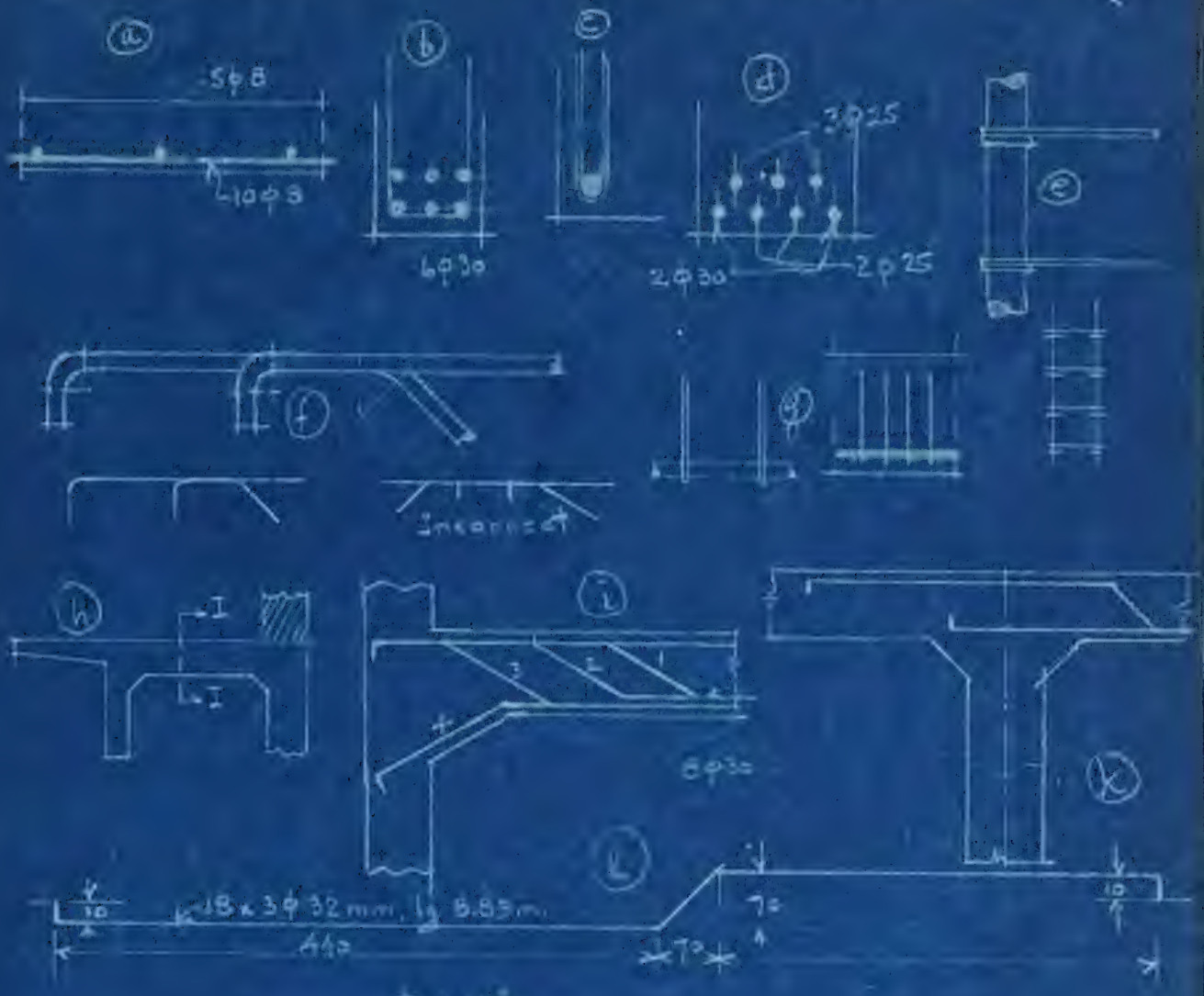


Fig 114

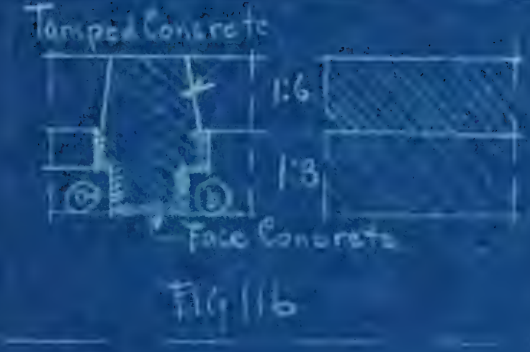
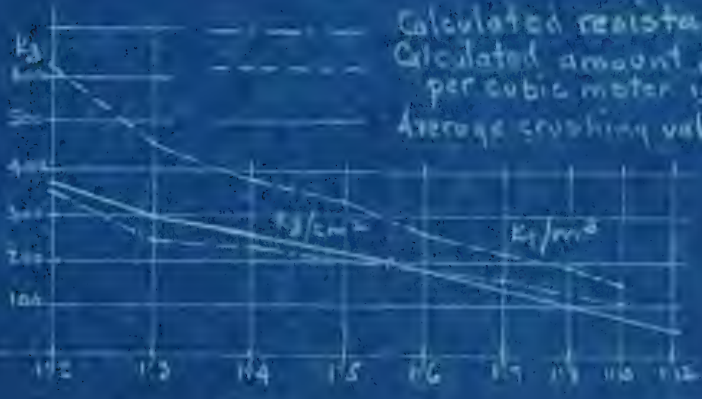


Fig 116

Fig 118



Calculated resistance to crushing kg/cm²
Calculated amount of cement in kg per cubic meter in tamped concrete.
Average crushing value of gravel concrete 28 days old

Fig 117

[illegible]
[illegible]
[illegible]

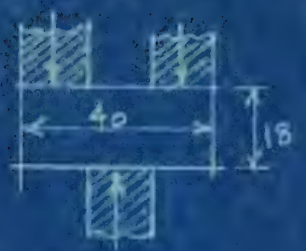


Fig 119

Fig 120

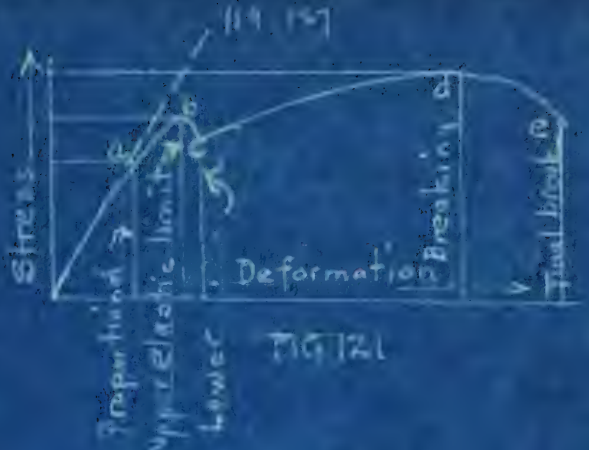


Fig 121

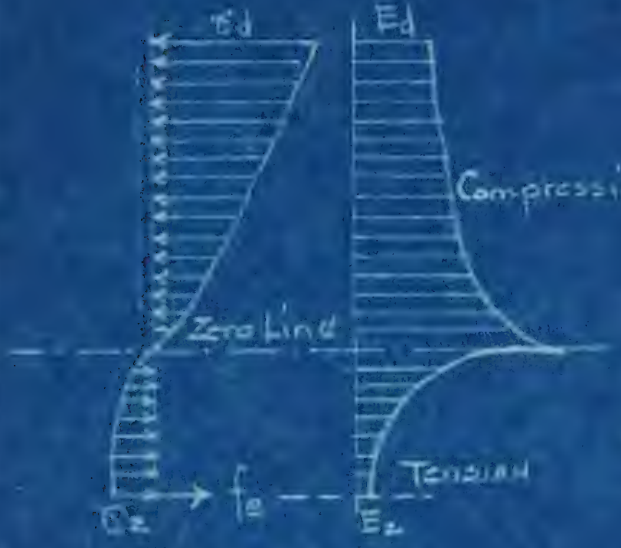


Fig 122

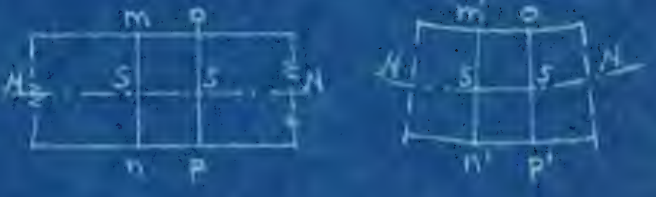


Fig 123 - 124

Fig 125

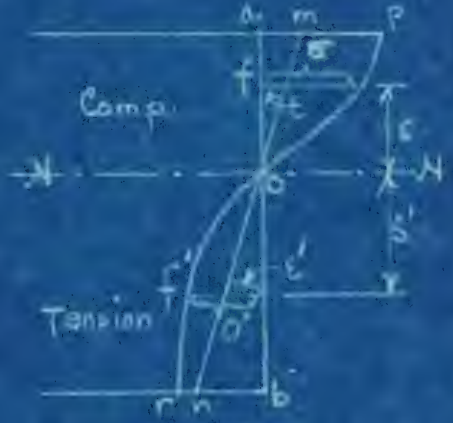


Fig 126

Fig 127

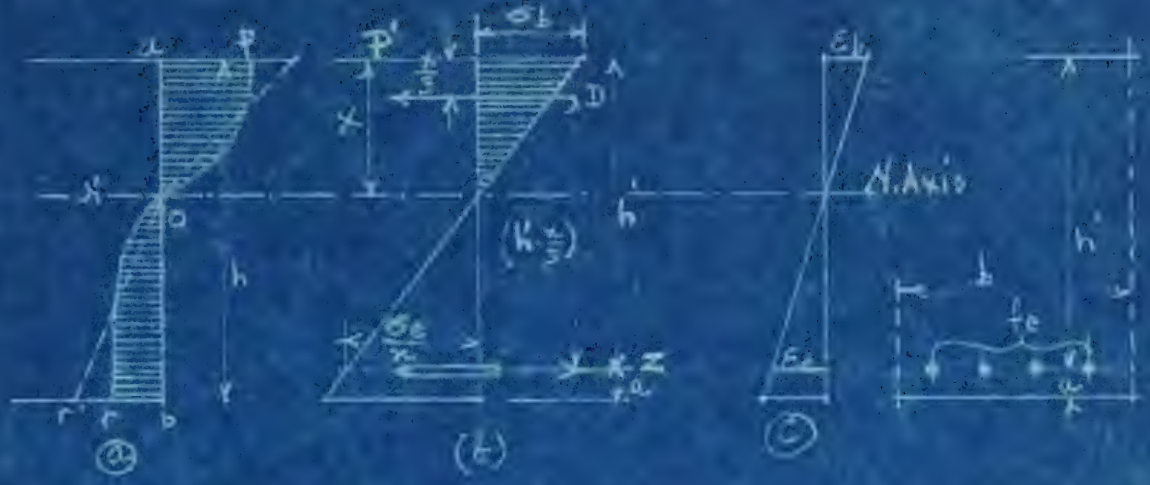


Fig. 129

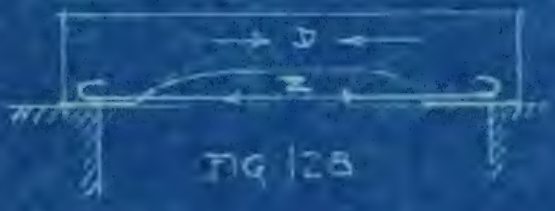


Fig 128

Fig 130

Fig 131

Fig 132

Fig 133

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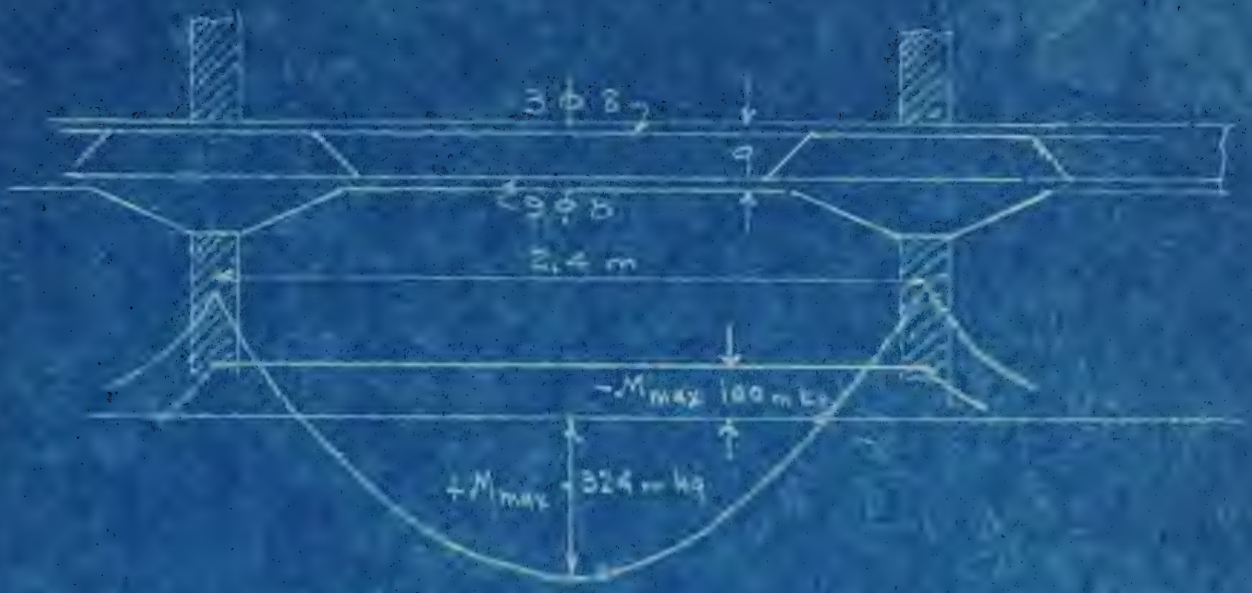

Fig 134

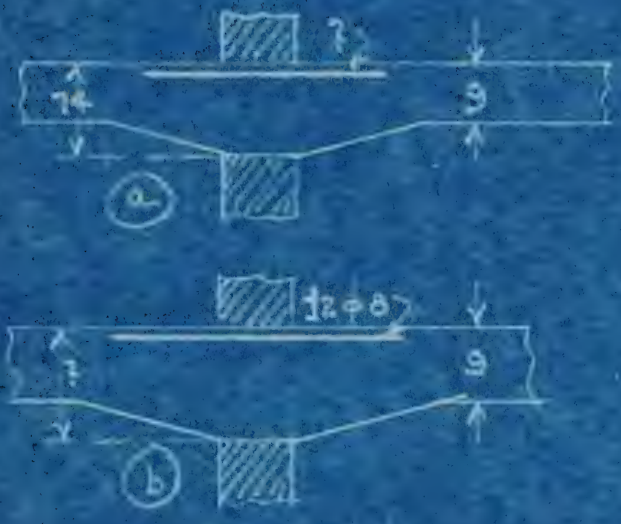

Fig 135

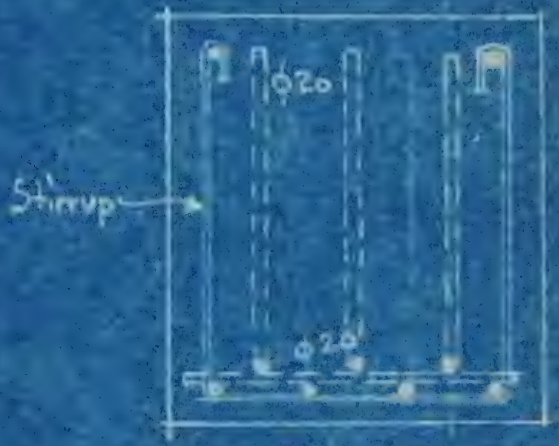

Fig 137

Fig 136

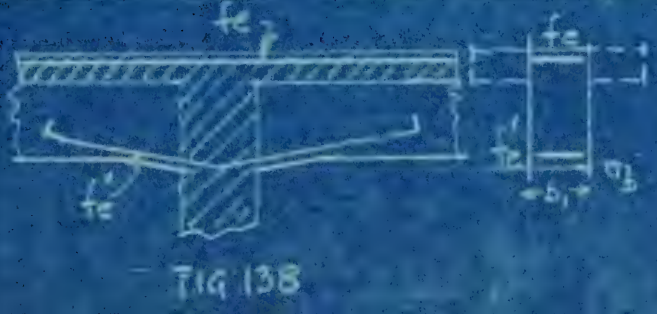

Fig 138

Fig 139

Fig 140

[illegible]

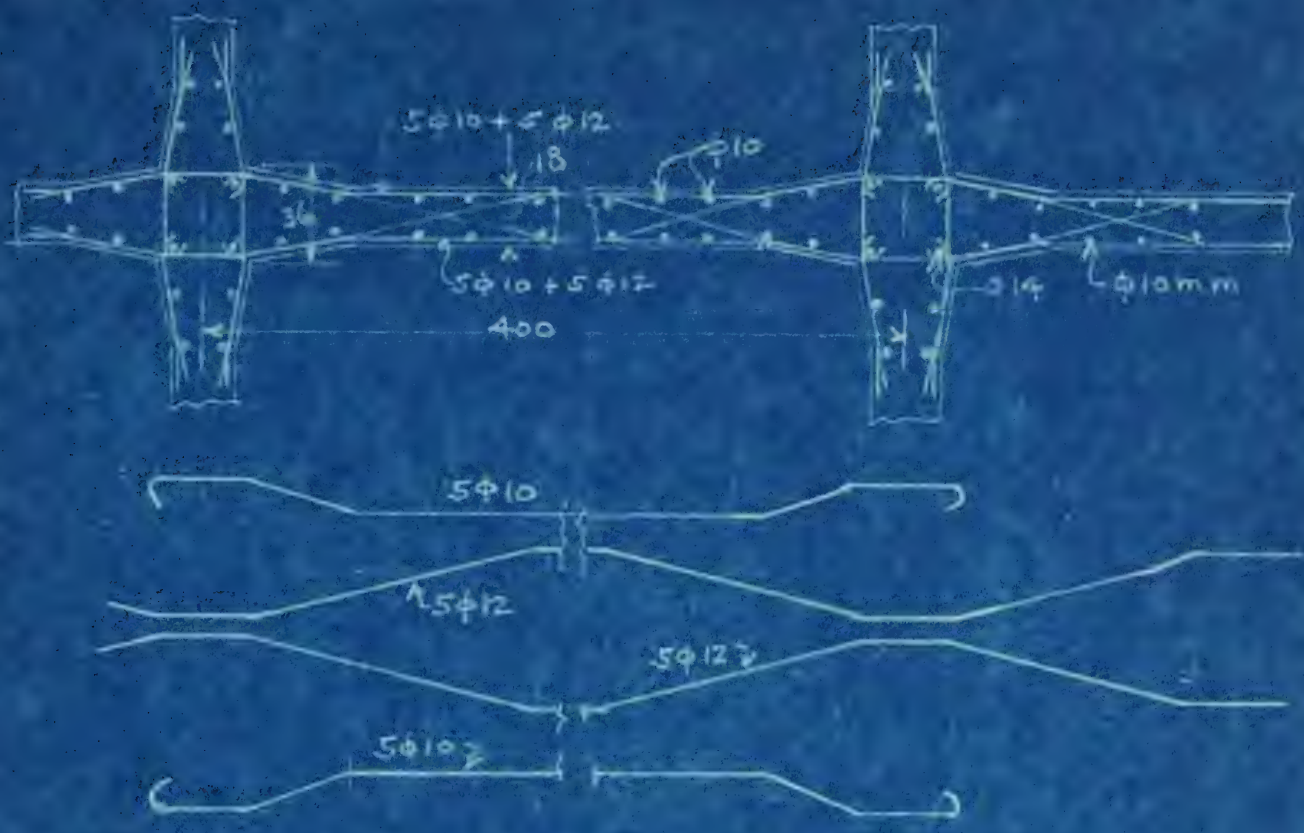

FIG 141

FIG 142

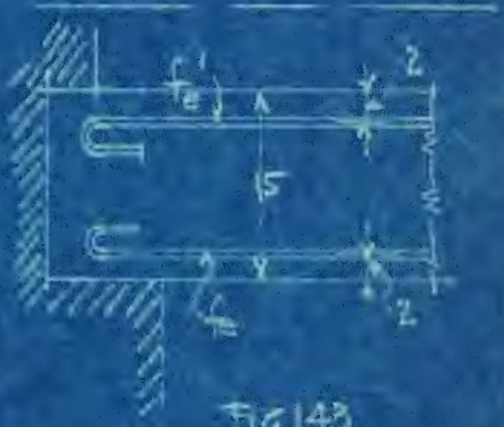

FIG 143

FIG 144

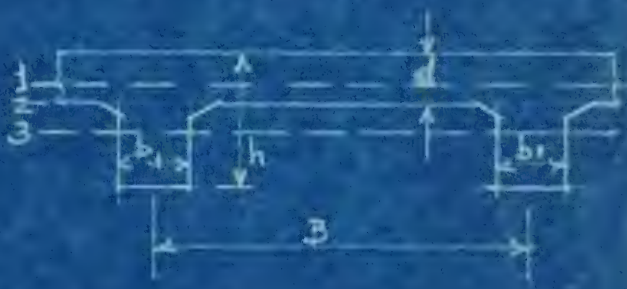

FIG 145

Fig 146

Fig 147

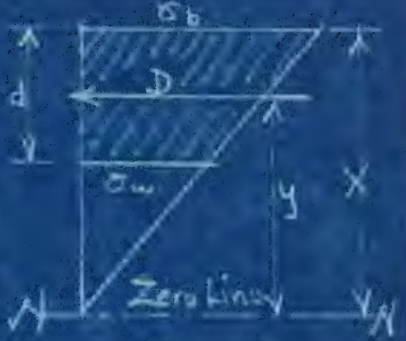

Fig 150

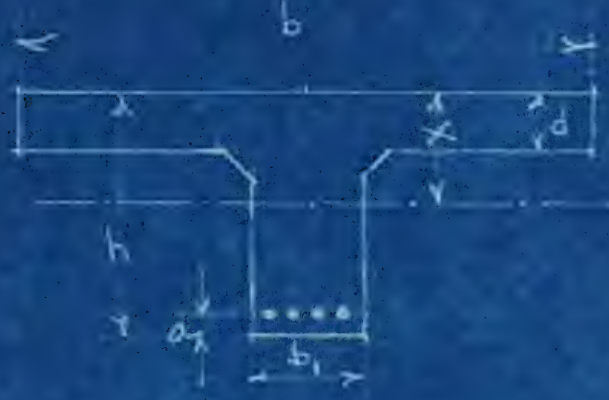

Fig 148

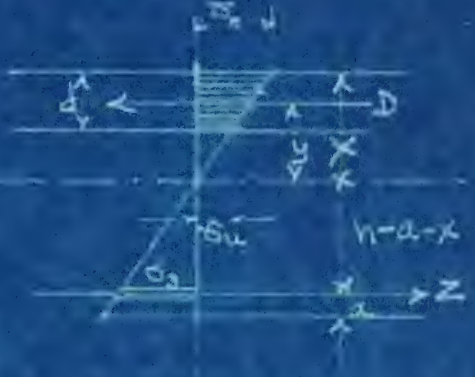

Fig 149

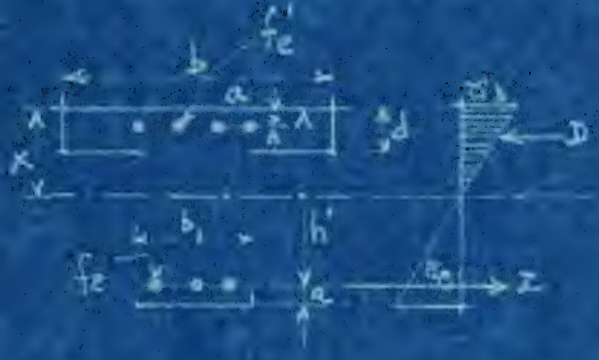

Fig 151

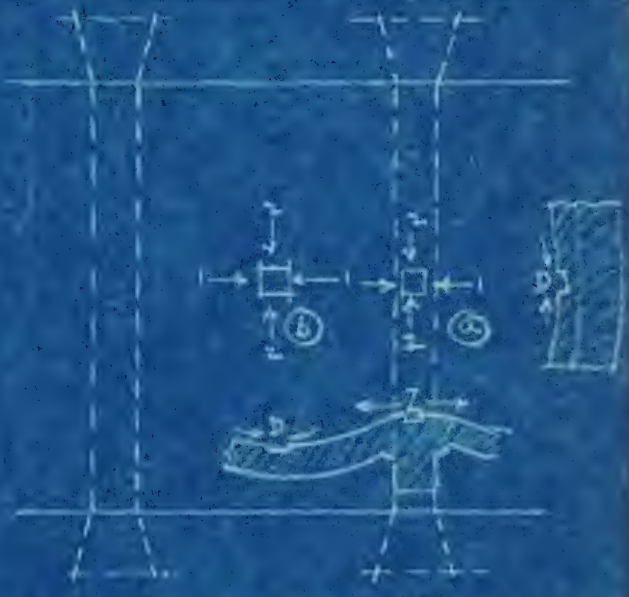

Fig 152

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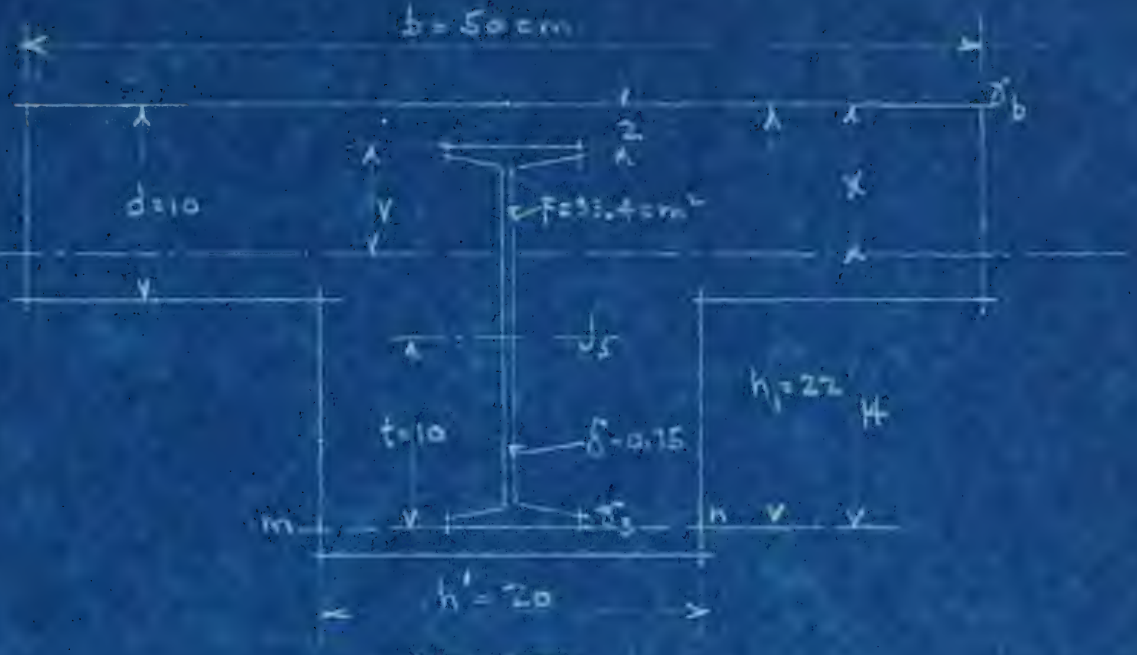

FIG 153

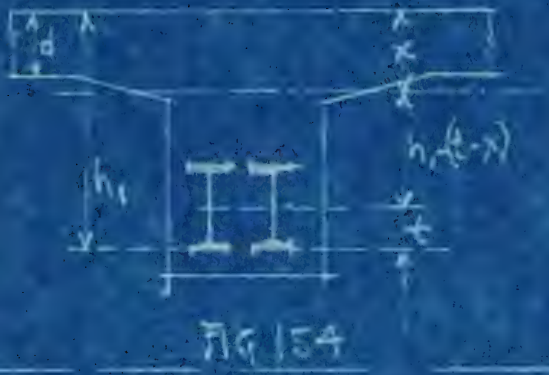

FIG 154

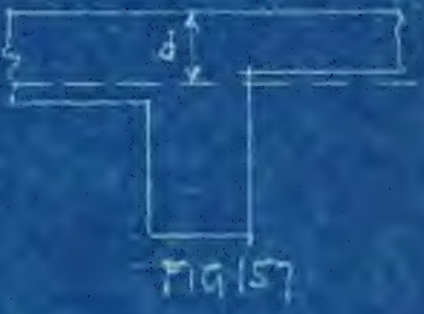

FIG 157

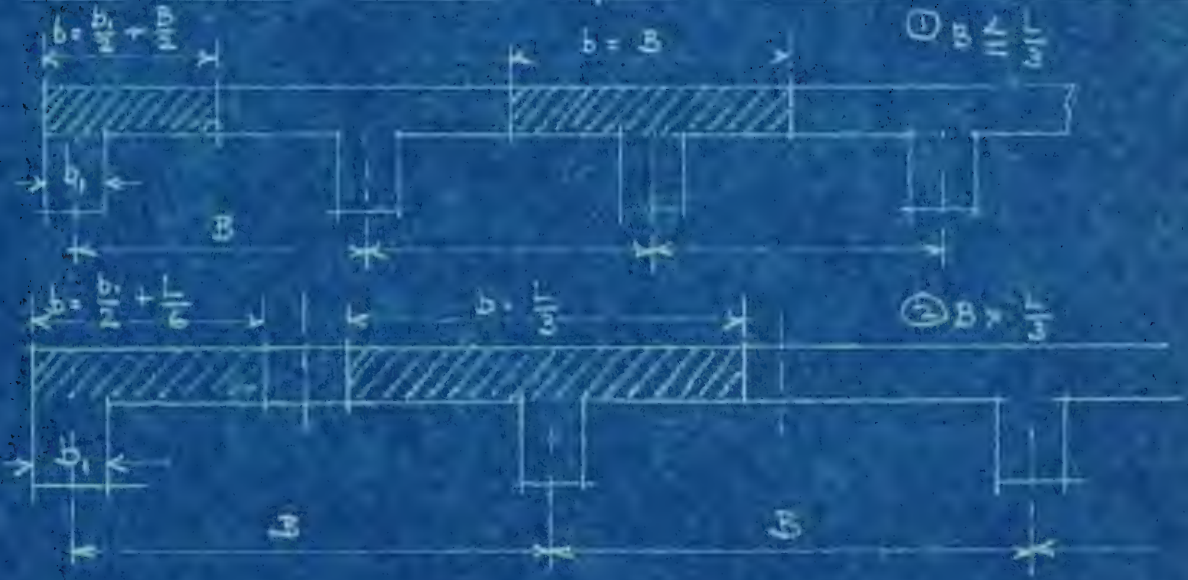

FIG 155

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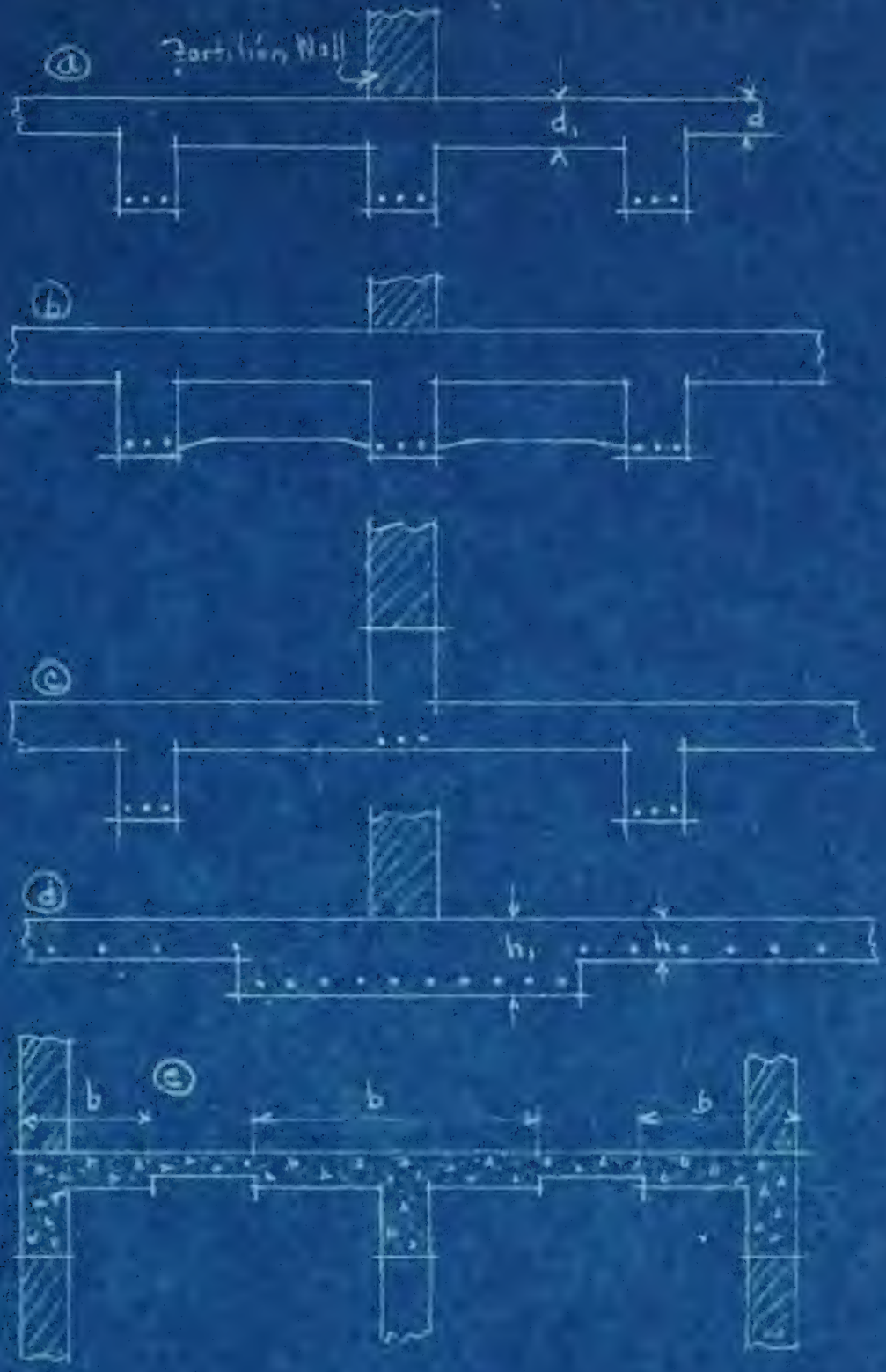

FIG 156

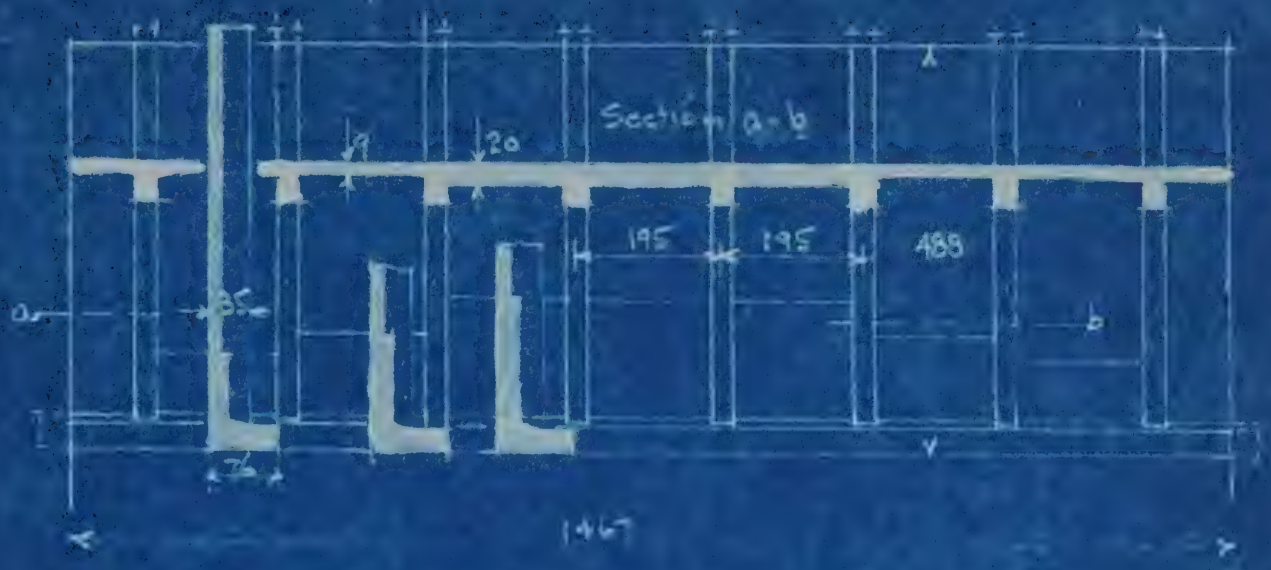

Fig 158

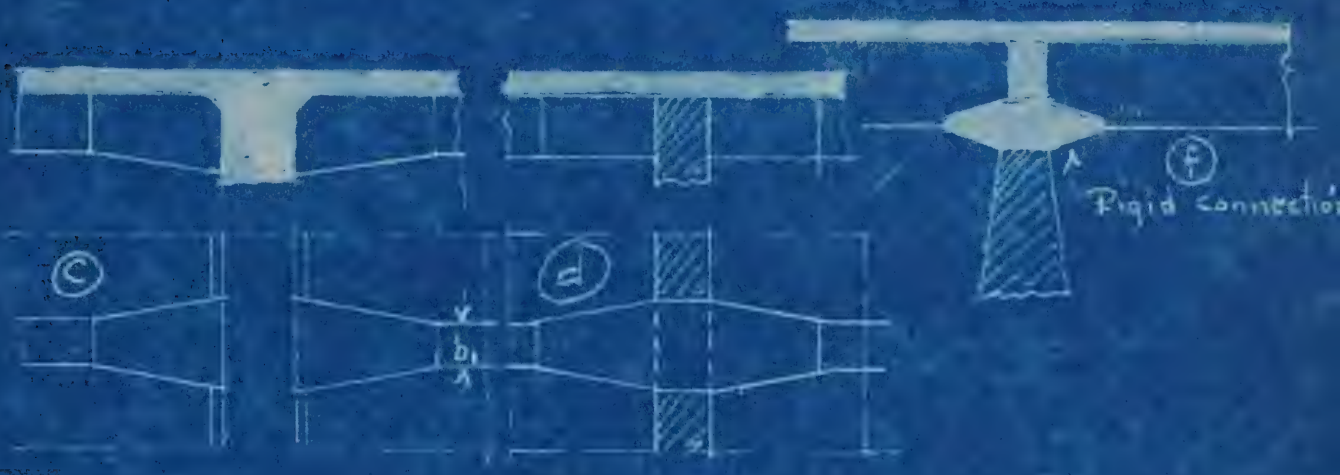

Fig 159

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Fig 160

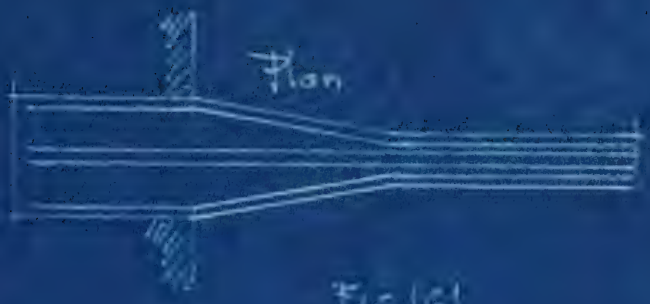
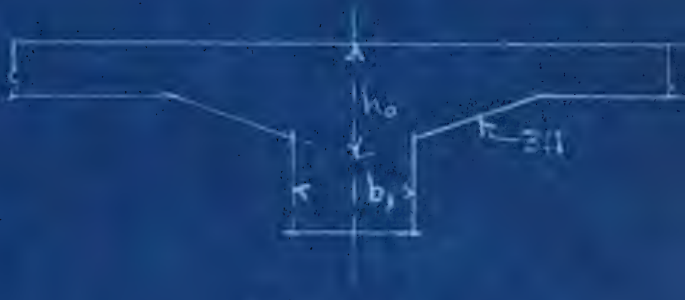


Fig 161

Fig 162



-Fig 163-

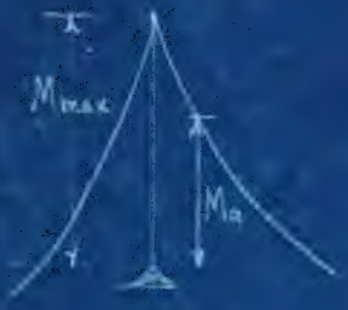
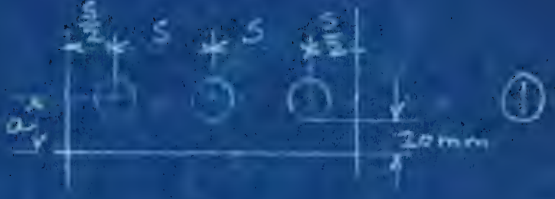


Fig 164



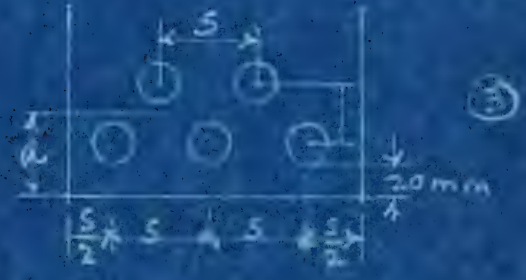


Fig 165

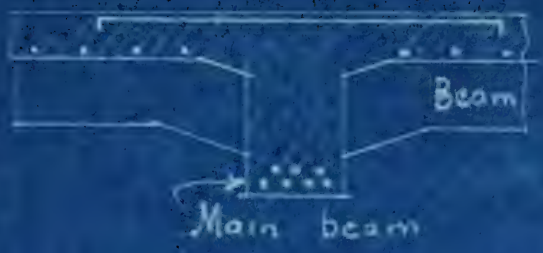
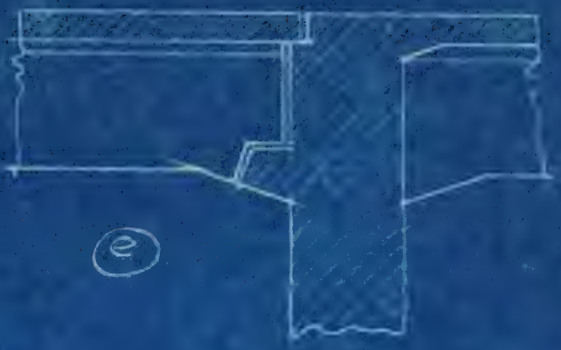
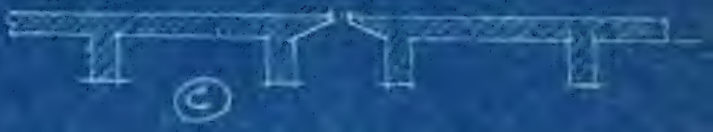


Fig 166





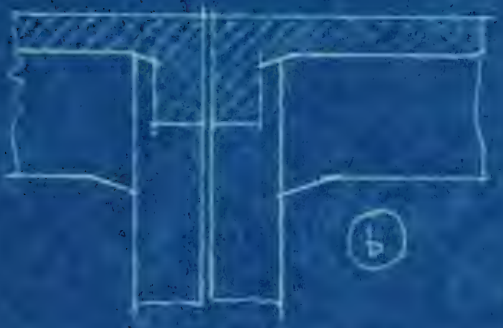


Fig 167

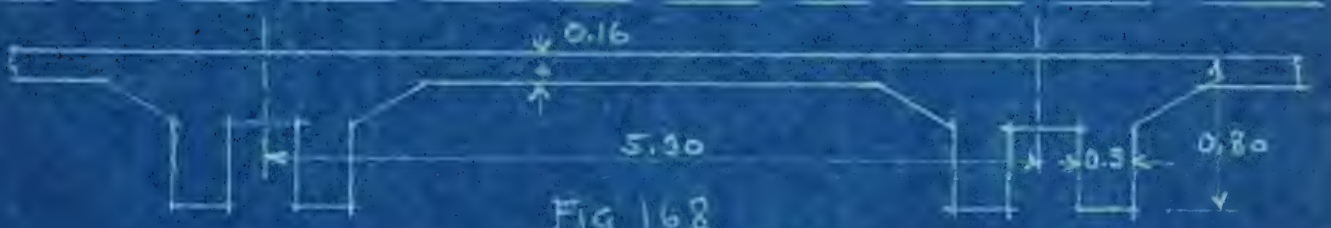


Fig 168

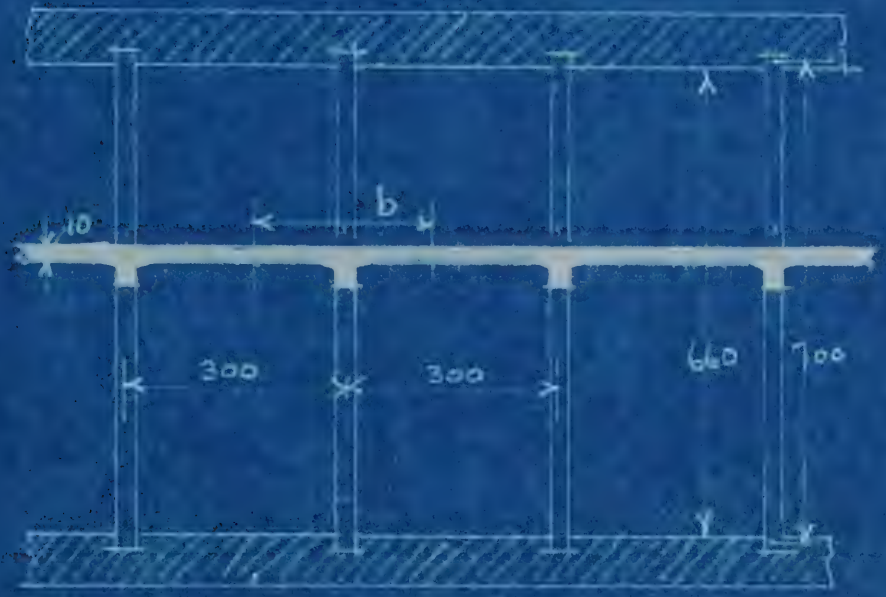


Fig 169

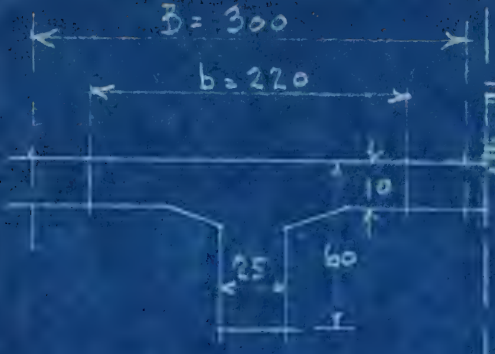


Fig 170

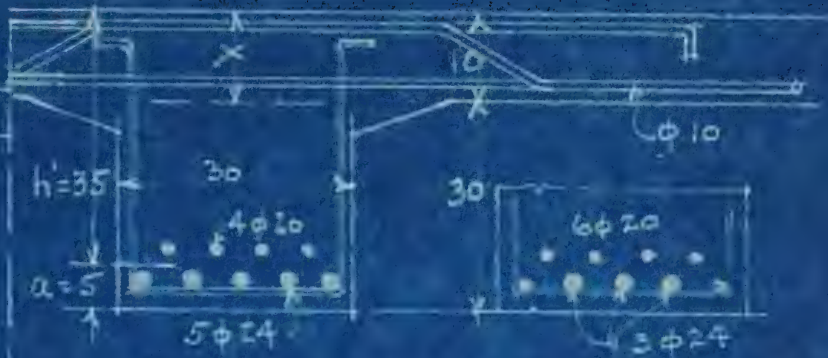


Fig 171

Fig 172

Fig 173

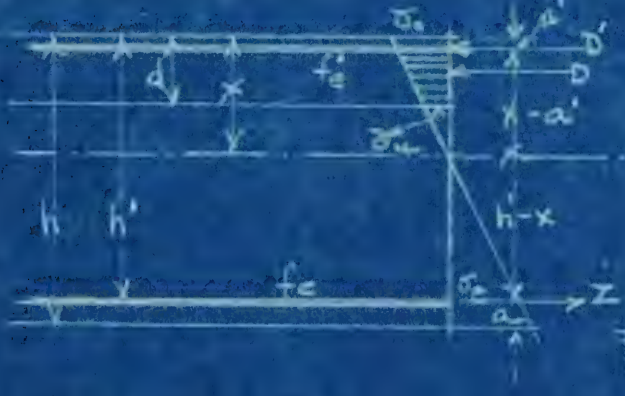
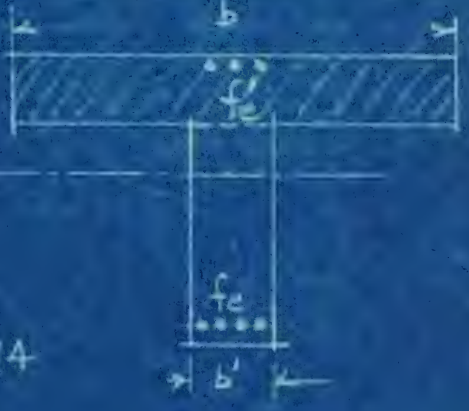


Fig 174



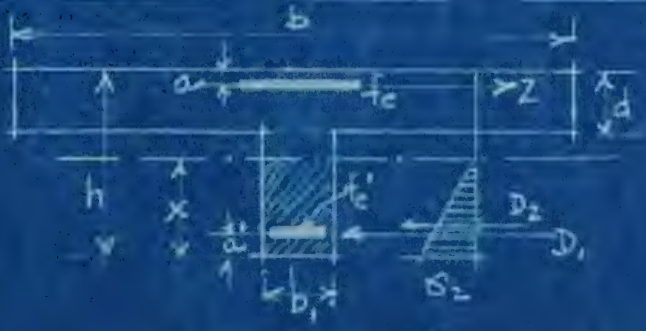


Fig 175 ②

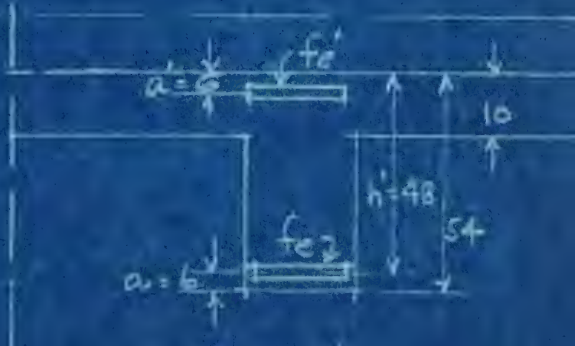


Fig 176

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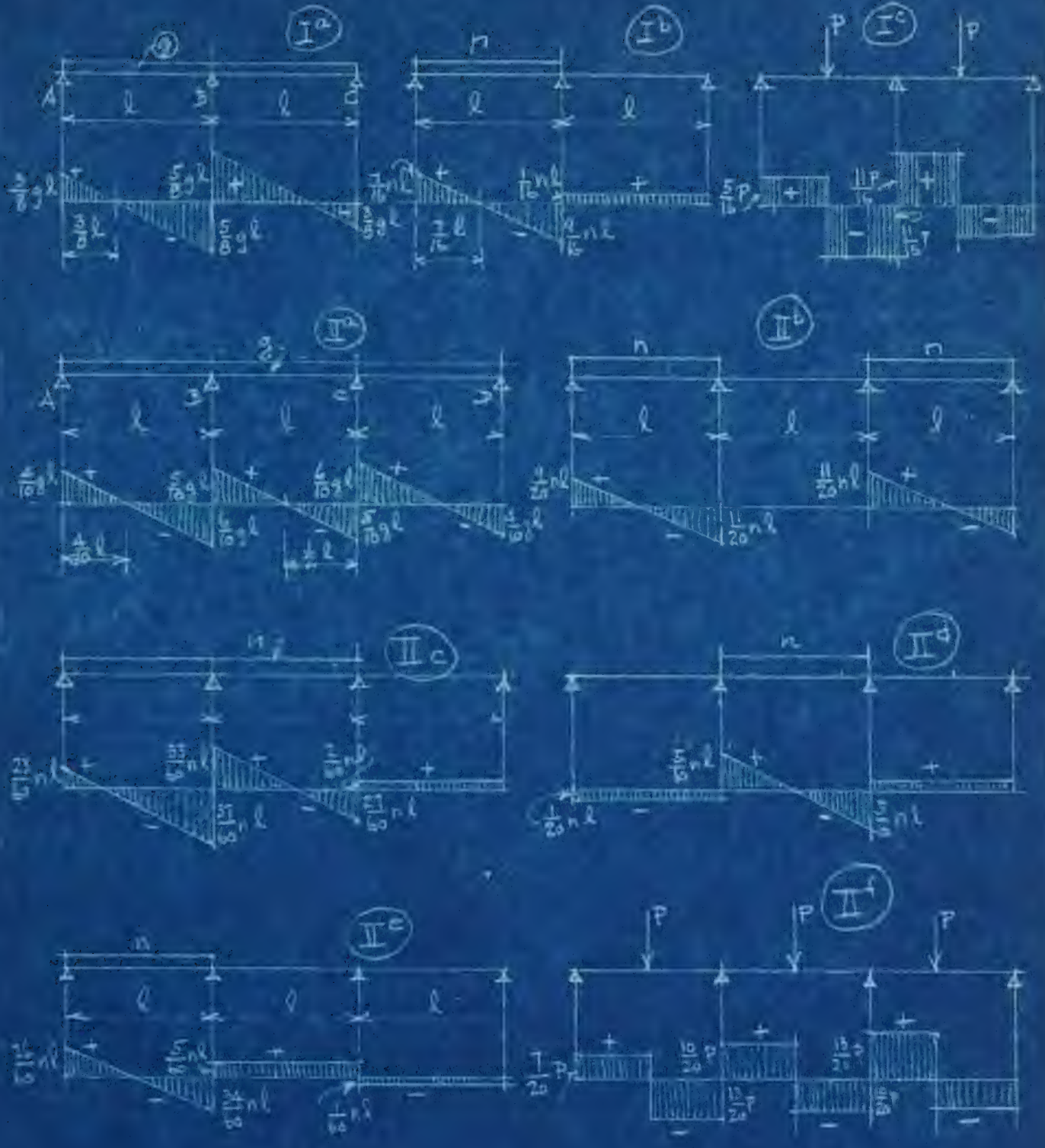

Fig 179

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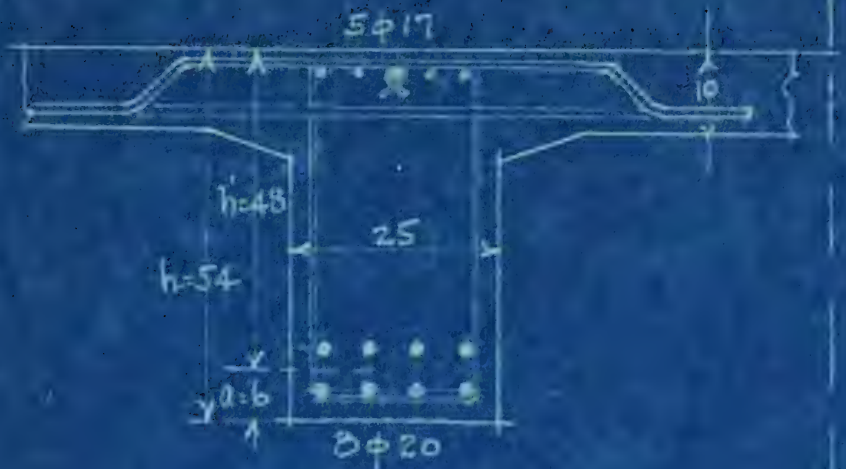

FIG 177

FIG 181

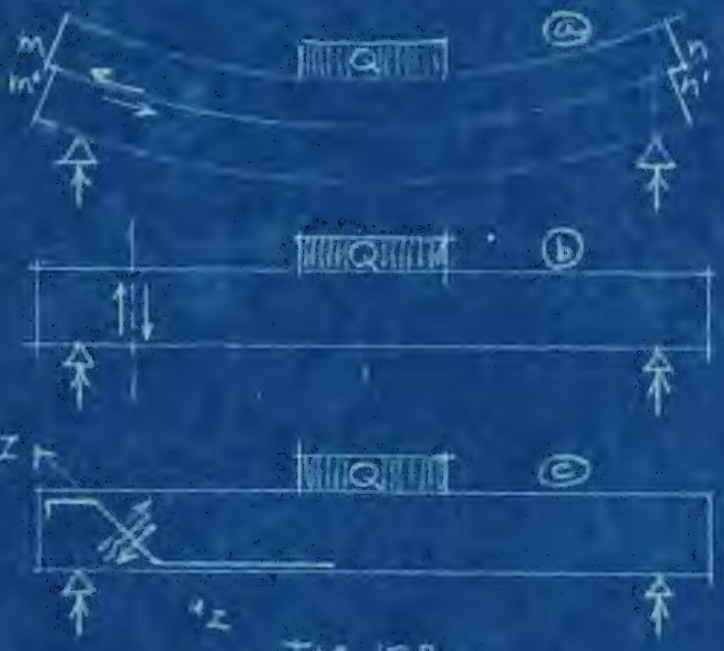

FIG 178

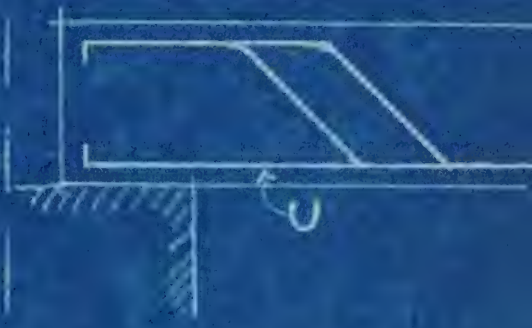

FIG 182

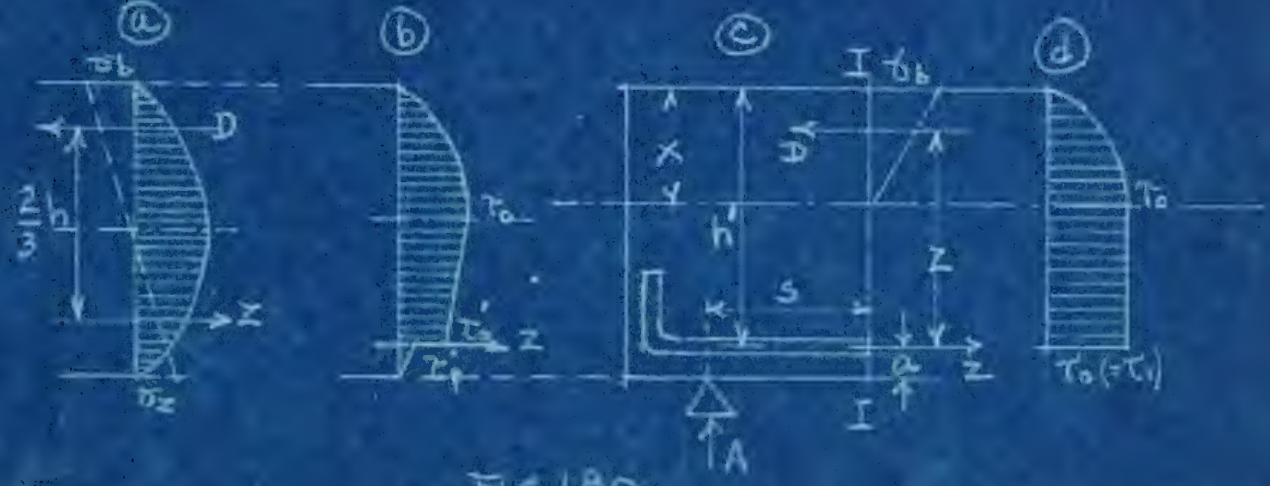

FIG 180

183, 84. 85. 86. 88. 89. 90. 91

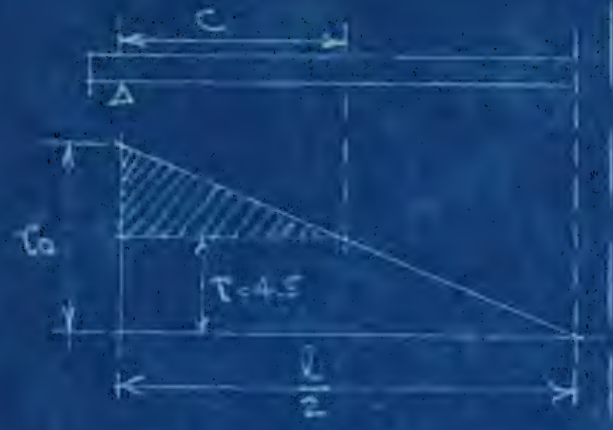

FIG 183

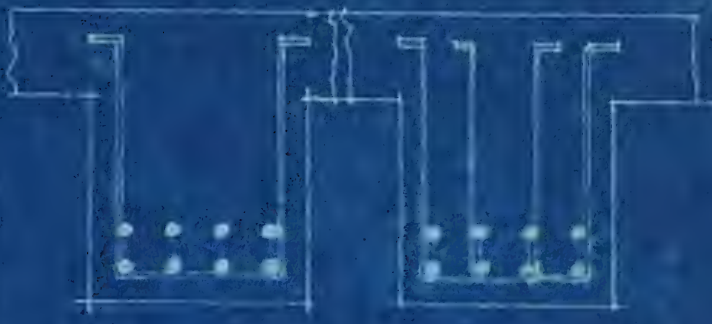

FIG 188

FIG 189

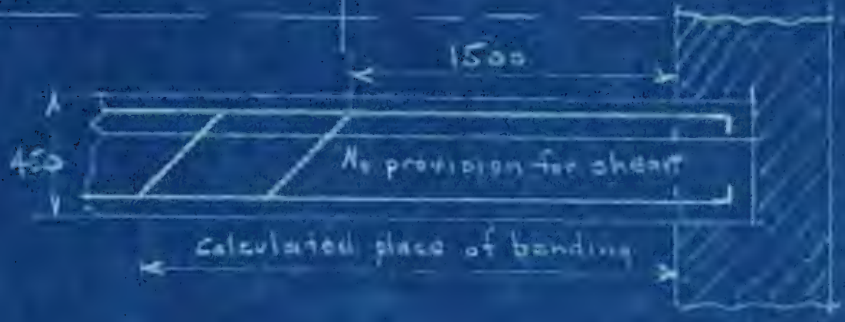

Fig 184

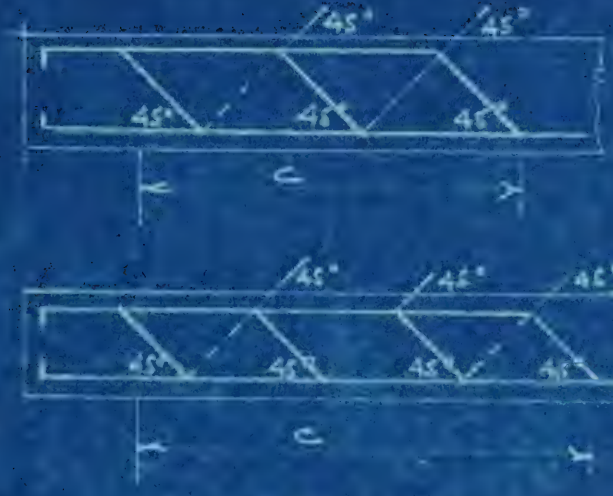

FIG 185

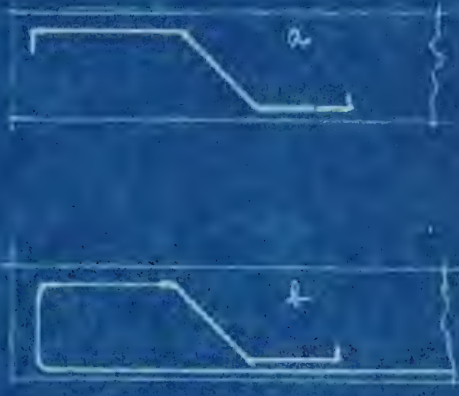

FIG 186

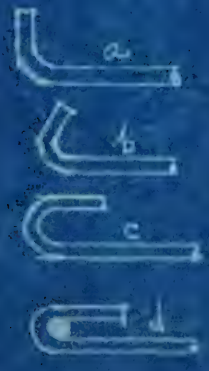

FIG 190

FIG 191

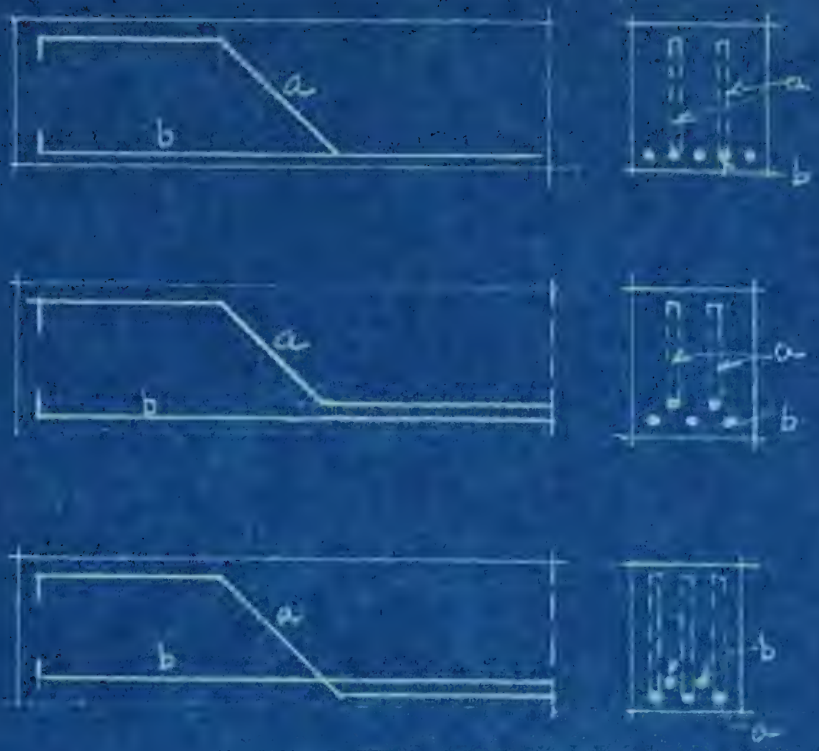

FIG 191

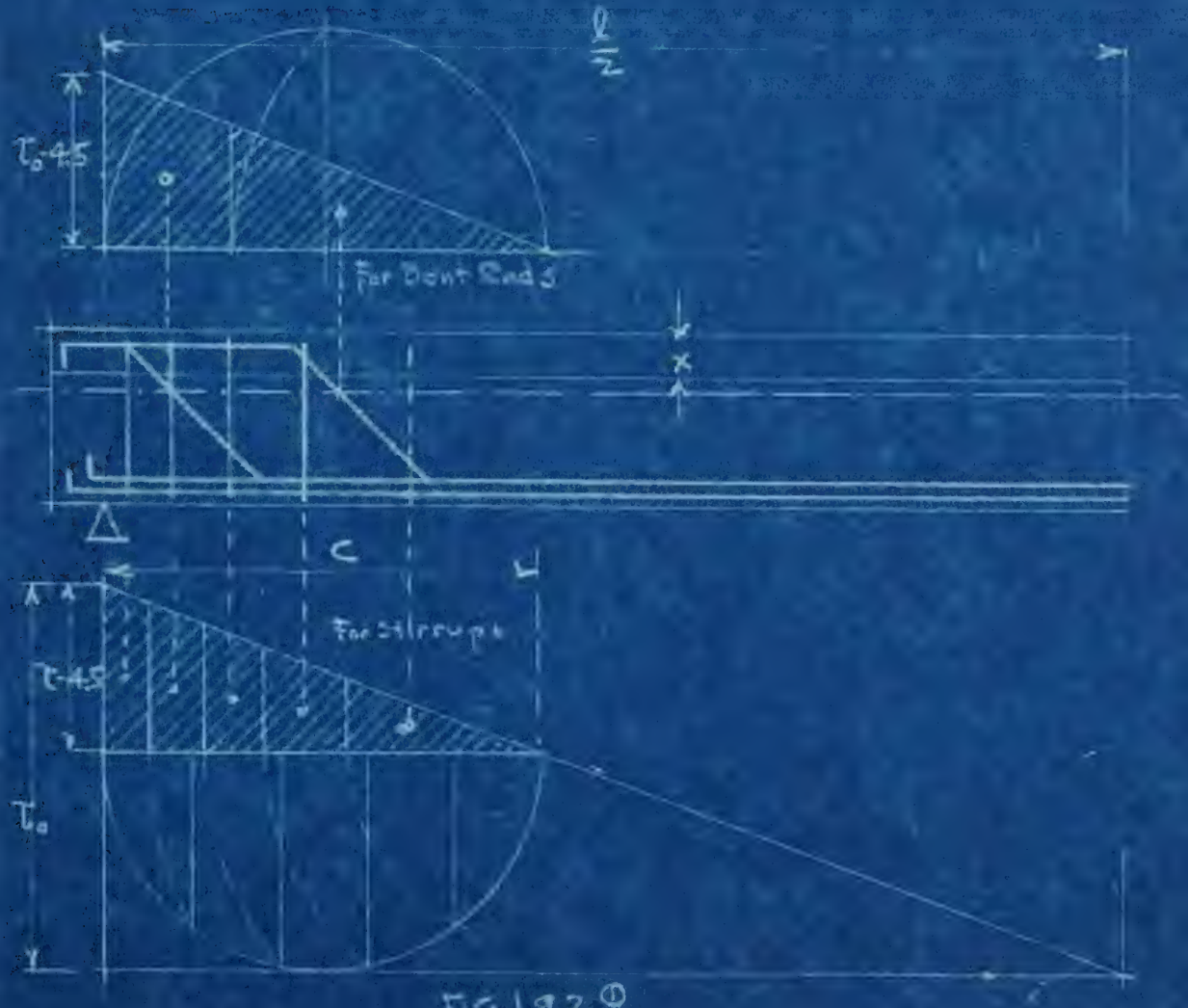

FIG 192①

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193 – 200

Fig 193

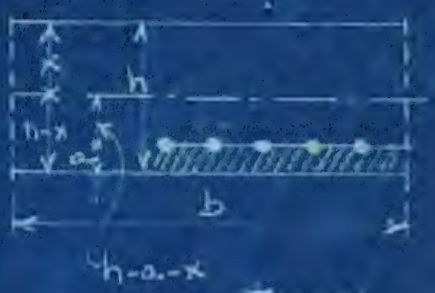

Fig 196

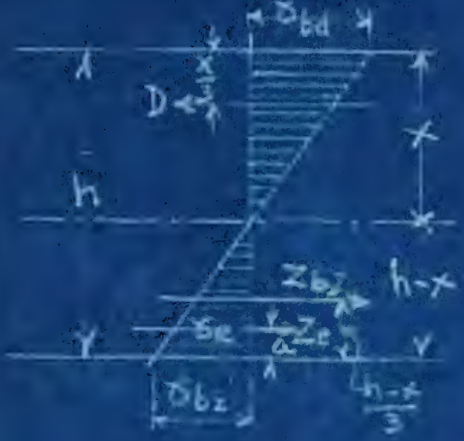

Fig 194

Fig 195

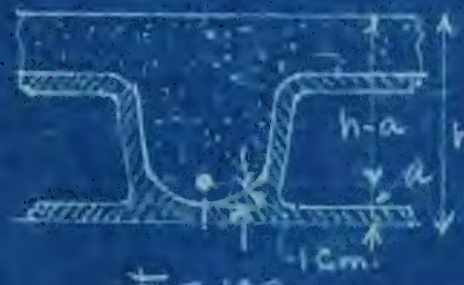

Fig 197

Fig 199

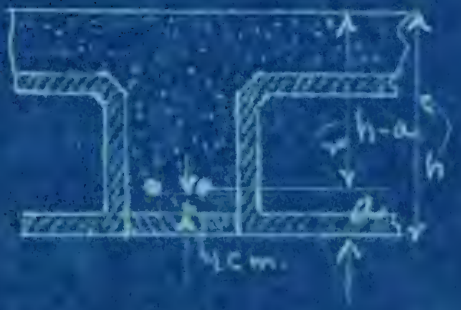

Fig 198

Fig 200

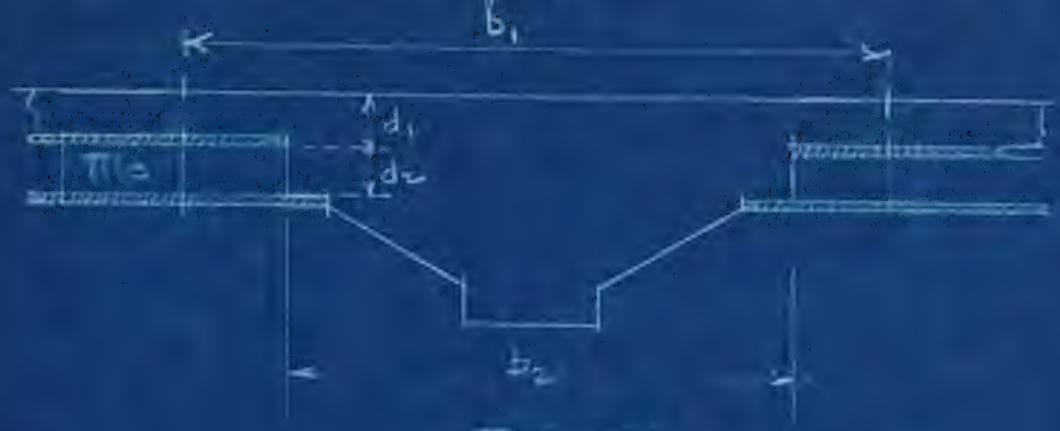

FIG-201

FIG 202

FIG 203

FIG 204

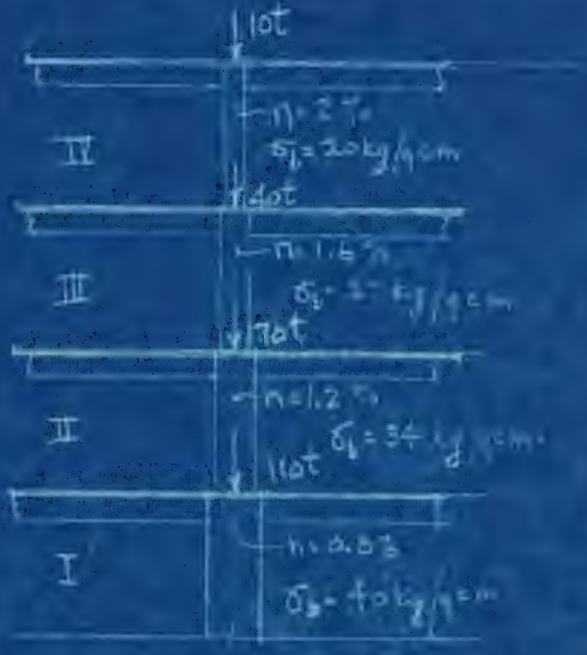

FIG 205

Fig. 206-213 inc.

FIG 206

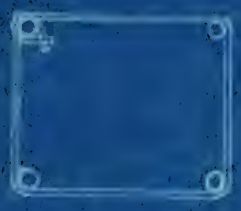

FIG 207

FIG 209

FIG 208

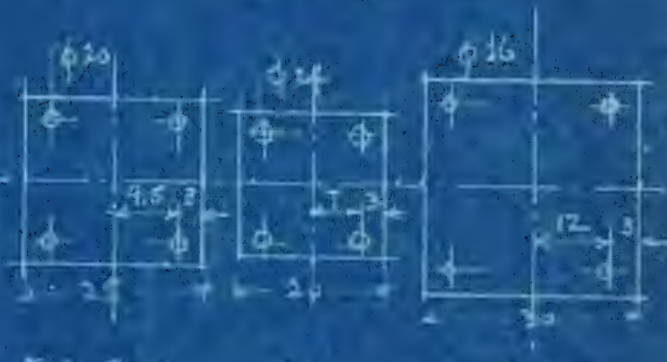

FIG 210 211 212

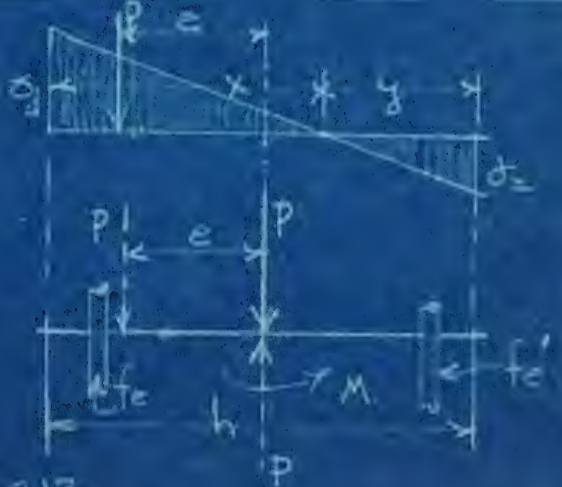

FIG 213

LIBRARY
OF THE
UNIVERSITY OF ILLINOIS

Fig 214 - 219 incl.

Fig 214 - 215

Fig 216

Fig 217

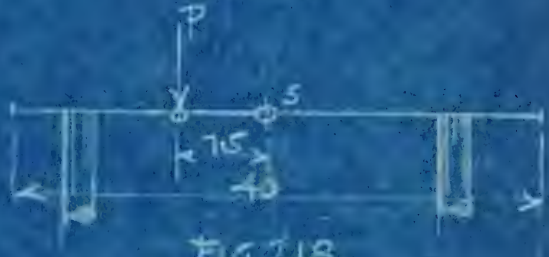

Fig 218

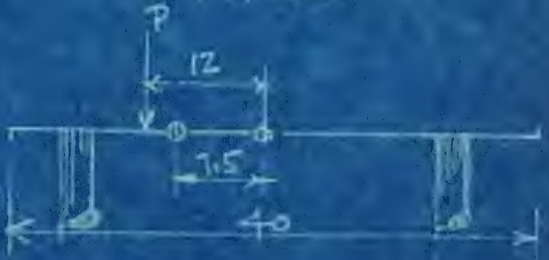

Fig 219

Fig. 220 - 228

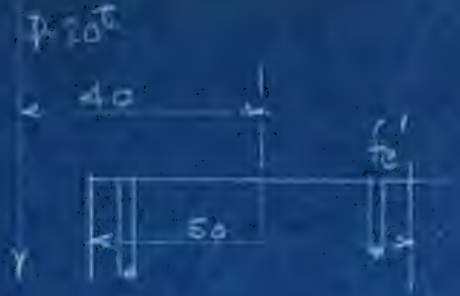

Fig 220

Fig 223

Fig 224

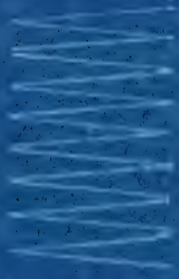

Fig 225

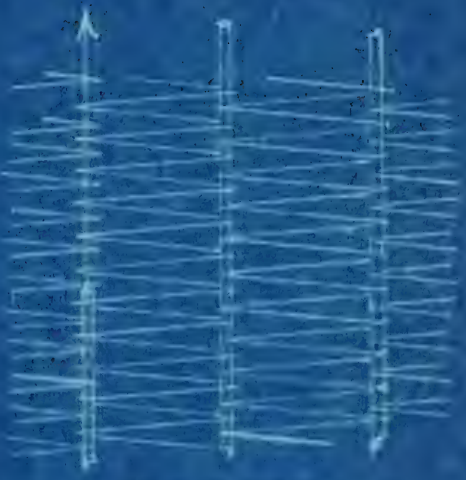

Fig 226

Fig 221 - 222

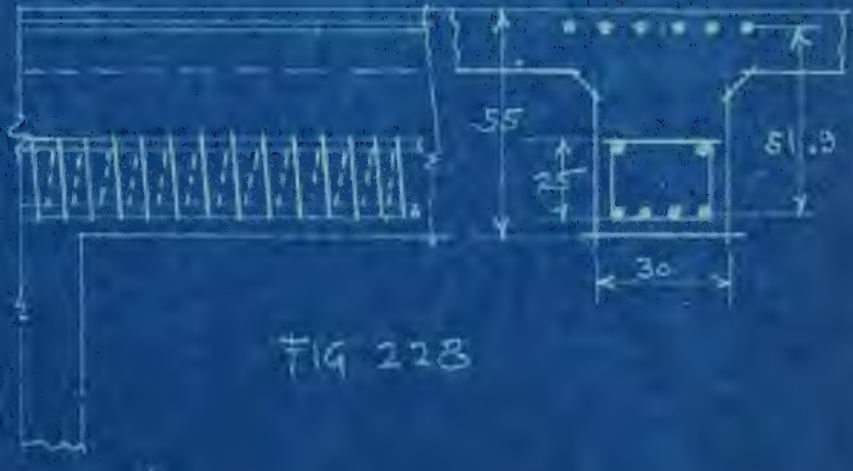

Fig 228

Fig 227

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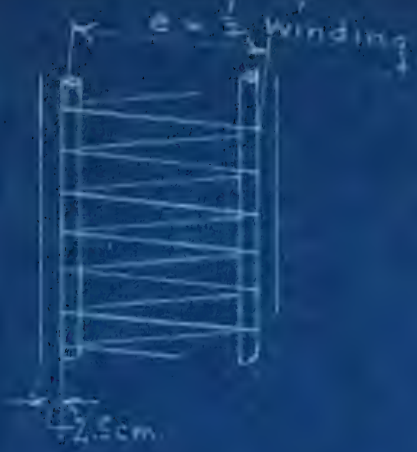
Fig 229 - 232



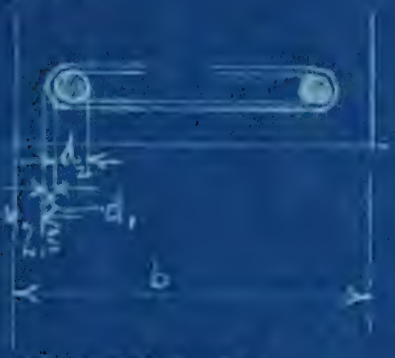
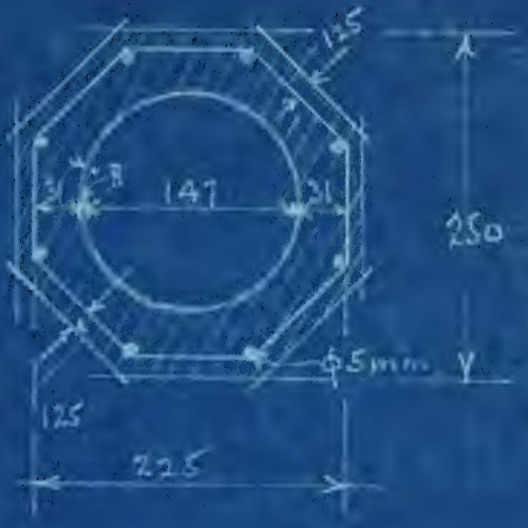


Fig 229-30



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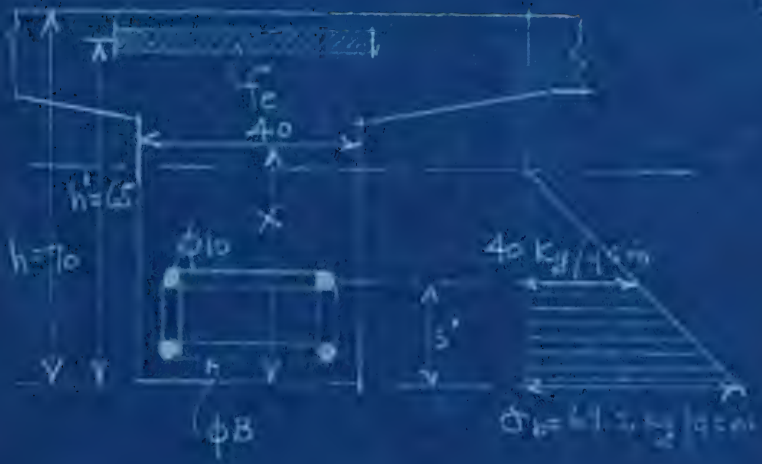

Fig 231

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